

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.55  
Tolerance mm : ± 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.70  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.45  
Tolerance mm : ± 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.55  
Tolerance mm : ± 0.25

---

##### GUIDE SLEEVE POSITION

A02

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.60  
Rated speed rpm : 1000  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1230

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

#### Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. :  $>$  9.20

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 325

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 840  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 760  
rack travel mm : 2.25  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 500  
rack travel mm : 0.90  
Tolerance mm :  $\pm$  0.10

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  220

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 267.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0



Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
  
Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.07.97  
Test oil : ISO 4113

Combination No. : 0 400 846 258

Injection pump  
Pump designation : PES6A90D410RS2293Z  
EP type number : 0 410 896 037

Governor  
Governor design. : RQV300...1425AB740L  
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

## FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1375  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

RATED SPEED

rack travel mm : 4.00  
rack travel mm : 4.00

---

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

rack travel mm : 2.00

---

Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.07.97  
Test oil : ISO 4113

Combination No. : 0 400 846 443

Injection pump  
Pump designation : PES6A90D410RS2293Z  
EP type number : 0 410 896 037

Governor  
Governor design. : RQV300...1400AB1066  
: -1DL  
Governor no. : 0 420 214 251

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM352A  
Power KW : 126.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

A07

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.00

Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500

Rack travel in mm : 16.50

A08

Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 11.40  
Rated speed rpm : 1445  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1595  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1750

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. :  $>$  10.50

##### Testing:

Rated speed rpm : 300

rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 625

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1200  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 225  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 350  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

##### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  220

Check  
speed 1/min :  $>$  80

Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 9.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.06.95  
Test oil : ISO 4113

Combination No. : 0 400 866 194

Injection pump  
Pump designation : PES6A1000320/3RS2763  
EP type number : 0 410 806 006

Governor  
Governor design. : RSV415...1175A0C2190  
: -69R  
Governor no. : 0 420 233 308

Cust. part No. : 3921135

## Customer-spec. information

Customer : CDC  
Motor : 6 CT  
Power KW : 129.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.45  
Tolerance mm : ± 0.05



Del. quantity cm <sup>3</sup> /1000 strokes	: 99.5
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 6.5
<hr/>	

Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1175
Aneroid pressure hPa	: -
Del. quantity cm <sup>3</sup> /1000 strokes	: 99.5
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 6.5

##### CONTROL LEVER

control lever position degree	: 110.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 9.40
Rated speed rpm	: 1245
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1310
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1400

rack travel mm	: 4.00
Rated speed rpm	: 1315
Tolerance 1/min	: ± 15

##### LOW IDLE

control lever position degree	: 86.0
tolerance degree	: ± 4.0

Control lever difference	
Grad	: 24.0
tolerance degree	: ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm	: 415
rack travel mm	: 4.70
Tolerance mm	: ± 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
-------------	-----------

##### Testing:

Rated speed rpm	: 415
rack travel mm	: 5.20
Tolerance mm	: ± 0.10

##### TORQUE CONTROL

Rated speed rpm	: 1175
rack travel mm	: 10.45
Tolerance mm	: ± 0.05

Rated speed rpm	: 800
rack travel mm	: 10.80

Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

---

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

---

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 076 773  
Injection pump  
Pump designation : PES6P100A320LS3342  
EP type number : 0 412 006 710  
Governor  
Governor design. : RSV415...1100P8A595  
Governor no. : 0 421 833 461

Cust. part No. : 1824625C91

Customer-spec. information  
Customer : NAVISTAR  
Motor : DT-530  
Power kW : 168.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 13.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 415

Rack travel in mm : 5.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1150

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : ± 6.0

##### Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 415

rack travel mm : 5.50

Tolerance mm : ± 0.10

##### TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 13.25

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 800  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 590  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 270  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 415  
  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.07.97

Test oil : ISO 4113

Combination No. : 0 402 076 774

## Injection pump

Pump designation : PES6P100A320LS3342

EP type number : 0 412 006 710

## Governor

Governer design. : RSV415...1100P8A596

Governer no. : 0 421 833 462

Cust. part No. : 1824624C91

## Customer-spec. information

Customer : NAVISTAR

Motor : DT-530

Power KW : 187.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8

Tolerance bar : ± 0.1

## Test nozzle holde assembly

: 1 688 901 101

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

## BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.60

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 130.0

## Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

## Check tolerance

cm<sup>3</sup>/1000S. : ± 3.0

## Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 415

Rack travel in mm : 5.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 108.0  
tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1150

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

---

##### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : ± 6.0

##### Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 415

rack travel mm : 5.50

Tolerance mm : ± 0.10

---

##### TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 12.60

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 800  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 800  
Pressure hPa : 1200  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 585  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 290  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 415  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.07.97  
Test oil : ISO 4113

Combination No. : 0 402 076 775

Injection pump  
Pump designation : PES6P100A320LS3342  
EP type number : 0 412 006 710

Governor  
Governor design. : RSV415...1100P8A597  
Governor no. : 0 421 833 463

Cust. part No. : 1824626C91

Customer-spec. information  
Customer : NAVISTAR  
Motor : DT-530  
Power KW : 153.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 415

Rack travel in mm : 5.60

Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 3.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 107.5  
tolerance degree :  $\pm$  6.0

RATED SPEED  
rack travel mm : 11.50

Rated speed rpm : 1150  
Tolerance 1/min :  $\pm$  5

Check  
speed 1/min :  $\pm$  10

rack travel mm : 4.00  
Rated speed rpm : 1200

Tolerance 1/min :  $\pm$  5  
Check

speed 1/min :  $\pm$  10

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1205

Tolerance 1/min :  $\pm$  5  
Check

speed 1/min :  $\pm$  10

---

##### LOW IDLE

control lever  
position degree : 78.5  
tolerance degree :  $\pm$  6.0

##### Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 415  
rack travel mm : 5.60

Tolerance mm :  $\pm$  0.10

---

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.55

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 800  
Pressure hPa : 1200  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 800  
Pressure hPa : 510  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 250  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 415  
Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 196 709

Injection pump  
Pump designation : PES6P120A720RS3354  
EP type number : 0 412 026 781

Governor  
Governor design. : RE30  
Governor no. :

Cust. part No. : RE 67771

Customer-spec. information  
Customer : DEERE  
Motor : 6081HRW06  
Power KW : 149.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery mark

\*NW after s.o.d. : 8.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference ° CS : 2.50

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check

tolerance mm : +/- 0.35

### ENGINE-SPEED SENSOR (ALL P and R pumps not H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 425  
Uact V : 1.610

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.610  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 196 710  
  
Injection pump  
Pump designation : PES6P120A72ORS3354  
EP type number : 0 412 026 781  
  
Governor  
Governor design. : RE30  
Governor no. :

Cust. part No. : RE 67448

---

Customer-spec. information  
Customer : DEERE  
Motor : 6081AT002  
Power KW : 135.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 077  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 015  
  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery mark

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference \* CS : 2.50

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min-1, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check

A27

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 425  
Uact V : 1.610



Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.610  
Tolerance Volt : +- 0.060  
Check tolerance  
Volt : +- 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 196 711

Injection pump  
Pump designation : PES6P120A720RS3354  
EP type number : 0 412 026 781

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 029

Cust. part No. : RE 68148

Customer-spec. information  
Customer : DEERE  
Motor : 6081HDW02  
Power KW : 163.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 7.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference \* CS : 2.50

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check

tolerance mm : +/- 0.35

### ENGINE-SPEED SENSOR

(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 425  
Uact V : 1.610

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.610  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 196 712  
Injection pump  
Pump designation : PES6P110A320RS3386  
EP type number : 0 412 016 757  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 044

Cust. part No. : RE 69563

Customer-spec. information  
Customer : DEERE  
Motor : 6068HDW55  
Power KW : 127.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

°NW after s.o.d. : 6.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference ° CS : 2.00

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min-1, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1000  
Uact V : 3.180  
Del. quantity  
cm3/1000 strokes : 142.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 600  
Uact V : 3.180  
Del. quantity  
cm3/1000 strokes : 143.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

Rated speed rpm : 400  
Uact V : 1.590

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

TEST POINT L1

Rated speed rpm : 400  
Uact V : 1.590  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 734 801

Injection pump  
Pump designation : PES4P120A120RS7313  
EP type number : 0 412 724 801

Governor  
Governor design. : RQV400...1250PA1113K  
Governor no. : 0 421 815 376

Cust. part No. : 3926603

Customer-spec. information  
Customer : CDC  
Motor : 48TA-A  
Power KW : 97.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 5.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.60  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : MAX  
Rated speed rpm : 1475

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : ± 6.0

#### RATED SPEED

rack travel mm : 13.40  
Rated speed rpm : 1310  
Tolerance 1/min : ± 15

rack travel mm : 4.00  
Rated speed rpm : 1480  
Tolerance 1/min : ± 5

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

#### LOW IDLE

control lever  
position degree : 71.5  
tolerance degree : ± 6.0

Control lever difference  
Grad : 44.5  
tolerance degree : ± 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.50

#### Testing:

Rated speed rpm : 420  
rack travel mm : 6.60  
Tolerance mm : ± 0.20

Rated speed rpm : 425

---

**TORQUE CONTROL**

Rated speed rpm : 1150  
rack travel mm : 14.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 850  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.20

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1150  
Pressure hPa : 1200

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.20

**MEASUREMENT**

Rated speed rpm : 1150

Pressure hPa : 555  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 290  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.15

---

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 315

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 325

---

**FUEL DELIVERY CHARACTERISTICS**

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 850

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**Aneroid pressure**

hPa : -  
Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

**LOW IDLE**

Rated speed rpm : 420  
Rack travel in mm : 6.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 0 402 736 807

Injection pump  
Pump designation : PES6P110A120RS7214  
EP type number : 0 412 716 805

Governor  
Governor design. : RQV350...1100PA964  
: -1K  
Governor no. : 0 421 815 253

Cust. part No. : 3921771

Customer-spec. information  
Customer : CDC  
Motor : 6CTA-A  
Power KW : 201.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

°NW after s.o.d. : 5.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.80

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.20  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.90  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.30  
Tolerance mm : ± 0.20

Rated speed rpm : 600  
guide sleeve  
travel mm : 5.30

Tolerance mm : ± 0.20

Rated speed rpm : 1200

guide sleeve

travel mm : 9.80

Tolerance mm : ± 0.20

##### GUIDE SLEEVE POSITION

control lever

position degree : - 1

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure

hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever

position degree : 120.0

tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 14.50

Rated speed rpm : 1150

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1315

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  6.0

Control lever difference  
Grad : 53.0  
tolerance degree :  $\pm$  6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. :  $>$  7.20

Testing:

Rated speed rpm : 350  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 15.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1100  
rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1500  
rack travel mm : 15.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
Pressure hPa : -  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 845  
rack travel mm : 13.80

Tolerance mm :  $\pm$  0.20

Pressure hPa : 335  
rack travel mm : 10.15  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  290

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
Combination No. : 0 403 466 148  
Injection pump  
Pump designation : PES6MW100/120RS1137  
: -3  
EP type number : 0 413 406 236  
Governor  
Governor design. : RSV550...1100MW2A335  
: -8  
Governor no. : 0 420 085 244  
Cust. part No. : 392 9184

Customer-spec. information  
Customer : CDC  
Motor : 6CTA-830/2188E  
Power KW : 209.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 433 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

°NW after s.o.d. : 9.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.55  
Tolerance mm : ± 0.05



Del. quantity cm3/1000 strokes	: 170.5
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

Rated speed rpm	: 550
Rack travel in mm	: 6.85
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 27.5
Tolerance cm3/1000 strokes	: ± 2.0
Check tolerance cm3/1000S.	: ± 4.5
Speed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.55
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 3.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
-----------------	--------

Aneroid pressure hPa	: 1300
Del. quantity cm3/1000 strokes	: 170.5
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

#### CONTROL LEVER

control lever position degree	: 97.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 13.50
Rated speed rpm	: 1165
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1350

rack travel mm	: 4.00
Rated speed rpm	: 1265
Tolerance 1/min	: ± 15

#### LOW IDLE

control lever position degree	: 70.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 27.0
tolerance degree	: ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm	: 550
rack travel mm	: 6.35
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 550  
rack travel mm : 6.85  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 600  
Tolerance 1/min :  $\pm$  30

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1000  
rack travel mm : 15.10  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 620  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 470  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  13.0

#### LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 6.85  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 400 074 896

Injection pump  
Pump designation : PES4M55C320RS110  
EP type number : 0 410 054 956

Governor  
Governor design. : RSF375/2200M21  
Governor no. : 0 420 021 148

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM616 2.4L ADA  
Power KW : 55.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 012

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1 688 901 111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

## Start of delivery mark

Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm3/1000S. : 3.0

Rated speed rpm : 375

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm3/1000 strokes : 7.5  
Tolerance  
cm3/1000 strokes :  $\pm$  0.5  
Spreed  
Tolerance  
cm3/1000 strokes : 1.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.00  
Tolerance mm :  $\pm$  0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100  
Del. quantity  
cm3/1000 strokes : 37.5  
Tolerance  
cm3/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm3/1000S. :  $\pm$  1.5  
Spreed  
Tolerance  
cm3/1000 strokes : 2.5  
Check tolerance  
cm3/1000S. : 3.0

---

RATED SPEED

control lever  
position degree : 50.0

Rated speed rpm : 2350  
rack travel mm : 8.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 2500  
rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

---

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree :  $\pm$  2.0

Setting point w/out bumper spring

Rated speed rpm : 375  
rack travel mm : 6.20

---

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 780  
Tolerance 1/min :  $\pm$  50

---

Load pick-up

Rated speed rpm : 250  
rack travel mm :  $>$  10.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.20  
Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1700  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 2150  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

---

ADJUSTMENT TEST ADA/ALDA

## SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : + 0.10

## MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : + 0.10

Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : + 0.20

## FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1700  
Del. quantity  
cm3/1000 strokes : 38.3  
Tolerance  
cm3/1000 strokes : + 0.8  
Check tolerance  
cm3/1000S. : + 1.8  
Spreed  
Tolerance  
cm3/1000 strokes : 2.5  
Check tolerance  
cm3/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2150  
Spreed  
Del. quantity  
cm3/1000 strokes : 38.3  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 2.0  
Spreed  
Tolerance  
cm3/1000 strokes : 2.5  
Check tolerance  
cm3/1000S. : 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm3/1000 strokes : 52.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 6.0

## LOW IDLE

Rated speed rpm : 375  
Del. quantity  
cm3/1000 strokes : 8.3  
Check tolerance  
cm3/1000S. : + 1.8  
Spreed  
Check tolerance  
cm3/1000S. : 1.5

control lever  
position degree : > 49.00

control lever  
position degree : < 46.50

## SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever  
position degree : 10.0  
tolerance degree : + 2.0

## TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump  
Pump designation : PE6P120A320RS3186  
EP type number : 0 411 826 756

Governor  
Governor design. : RQV250...1025PA921  
: -4  
Governor no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD102F (Q)  
Power KW : 220.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

#### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 12.45  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 250

Rack travel in mm : 5.10  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1080  
guide sleeve  
travel mm : 8.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.25

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 430  
guide sleeve  
travel mm : 3.65  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 700  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1080

Rack travel in mm : 16.50  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 117.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 11.45



Rated speed rpm : 1060  
Tolerance 1/min :  $\pm$  5  
  
rack travel mm : 4.00  
Rated speed rpm : 1135  
Tolerance 1/min :  $\pm$  15  
  
rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 8.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 150  
  
CRT mm min. :  $>$  7.00

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.75

Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510  
rack travel mm : 2.35  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 100  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.10  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97

Test oil : ISO 4113

Combination No. : 0 401 848 830

## Injection pump

Pump designation : PE8P110A320LS3865

EP type number : 0 411 818 728

## Governor

Governer design. : RQV250...1000PA1286

Governer no. : 0 421 814 175

Cust. part No. :

## Customer-spec. information

Customer : DHI

Motor : V2-8TC

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

## Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

## Test nozzle holde

assembly : 1 688 901 101

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

## Tolerance

: ± 0.50

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Rated speed rpm : 250

Rack travel in mm : 8.20

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058  
guide sleeve  
travel mm : 8.56  
Tolerance mm : ± 0.15

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.31  
Tolerance mm : ± 0.20

Rated speed rpm : 666  
guide sleeve  
travel mm : 5.29  
Tolerance mm : ± 0.25

Rated speed rpm : 380

guide sleeve  
travel mm : 3.20  
Tolerance mm : ± 0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

Rack travel in mm : 12.00  
Tolerance mm : ± 2.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.00  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1155  
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : +- 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : +- 4.0

control lever  
position degree : 16.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.60

#### Testing:

Rated speed rpm : 250  
rack travel mm : 8.20  
Tolerance mm : +- 0.10

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.00  
Tolerance mm : +- 0.05

Rated speed rpm : 650  
rack travel mm : 13.00  
Tolerance mm : +- 0.10

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 190

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 210

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 650

Del. quantity  
cm3/1000 strokes : 145.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 125.0  
Tolerance  
cm3/1000 strokes : +- 20.0  
Check tolerance  
cm3/1000S. : +- 24.0

---

#### LOW IDLE

Rated speed rpm : 250  
Rack travel in mm : 8.20  
Tolerance mm : +- 0.10  
Del. quantity  
cm3/1000 strokes : 25.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
Combination No. : 0 401 878 140  
Injection pump  
Pump designation : PE8P120A520/5RS427  
EP type number : 0 411 828 048  
Governor  
Governor design. : RSUV300...900POA320  
: -1  
Governor no. : 0 421 829 107  
Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : TBD 234 V8  
Power KW : 400.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 8- 5- 4- 7  
: - 2- 3- 6  
Phasing : 0-30-90-120-180  
: -210-270-300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 750  
Rack travel in mm : 13.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm3/1000 strokes : 23.0

Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. :  $\pm$  6.0

Spreed

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 3.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 250.0

C01

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 945  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 980  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1130

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  30

##### TORQUE CONTROL

Dimension a mm : 3.90  
Rated speed rpm : 750  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 900  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 280  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.30

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

---

#### LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance

cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113

Combination No. : 0 402 046 350

Injection pump  
Pump designation : PES6P110A72ORS531  
EP type number : 0 412 016 076

Governor  
Governor design. : RQV300...1100PA1016  
: -7  
Governor no. : 0 421 813 972

Cust. part No. :

## Customer-spec. information

Customer : IVECO-UNIC  
Motor : 8361.25.510

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.05  
Tolerance mm : ± 0.50  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5



Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm3/1000 strokes : 15.5  
Tolerance  
cm3/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm3/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm3/1000 strokes : 4.5  
Check tolerance  
cm3/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1145  
guide sleeve  
travel mm : 8.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500  
guide sleeve  
travel mm : 2.80  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1240

Rack travel in mm : 9.30  
Tolerance mm :  $\pm$  1.30

C04

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm3/1000 strokes : 121.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 9.30  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5  
Check  
speed 1/min :  $\pm$  10

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min :  $\pm$  15  
Check  
speed 1/min :  $\pm$  20

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

rack travel mm : 4.00

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.70

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 430

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 430  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 465  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

C05

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97

Test oil : ISO 4113

Combination No. : 0 402 646 651

## Injection pump

Pump designation : PE6P120A320LS7357

EP type number : 0 412 626 934

## Governor

Governer design. : RQV325...975PA1190K

Governer no. : 0 421 815 450

Cust. part No. :

## Customer-spec. information

Customer : LIAZ

Motor : M640T

Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

## Test nozzle holde assembly

: 1 688 901 105

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.80

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 12.00

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 725

Rack travel in mm : 14.40

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 267.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rack travel in mm : 4.10  
Tolerance mm : + 0.30

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1033  
guide sleeve  
travel mm : 10.20  
Tolerance mm : + 0.20

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.43  
Tolerance mm : + 0.15

Rated speed rpm : 620  
guide sleeve  
travel mm : 5.01  
Tolerance mm : + 0.25

Rated speed rpm : 370  
guide sleeve  
travel mm : 2.00  
Tolerance mm : + 0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 2.64  
Tolerance mm : + 0.25

Rated speed rpm : 460  
guide sleeve  
travel mm : 3.02  
Tolerance mm : + 0.25

Rated speed rpm : 1141  
guide sleeve  
travel mm : 12.00

Tolerance mm : + 0.25

Rated speed rpm : 1240  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1070

Rack travel in mm : 14.10  
Tolerance mm : + 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 725  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 267.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 122.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 14.10  
Rated speed rpm : 1020  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. :  $>$  5.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.10  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 725  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 975  
rack travel mm : 15.15  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 600  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 975  
Pressure hPa : 1500  
rack travel mm : 15.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 975  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 975

Pressure hPa : 320  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.25

Pressure hPa : 590  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  245

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  265

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 975  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

---

LOW IDLE

Rack travel in mm : 4.10  
Tolerance mm :  $\pm$  0.30

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 646 967  
Injection pump  
Pump designation : PE6P130A720RS7150  
: -10  
EP type number : 0 412 636 831  
Governor  
Governor design. : RQV250...900PA881-1  
Governor no. : 0 421 813 982

Cust. part No. : 864988-P04 v.06.97

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 162 C

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration  
damper  
(RoBo diaphragm) : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 9.40  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 11.60  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 336.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Rated speed rpm : 250

Rack travel in mm : 4.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 925  
guide sleeve  
travel mm : 7.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.10  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.30

Tolerance mm :  $\pm$  0.30

Rated speed rpm : 700  
guide sleeve  
travel mm : 4.80  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 985  
guide sleeve  
travel mm : 8.60  
Tolerance mm :  $\pm$  0.20

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 980

Rack travel in mm : 16.50  
Tolerance mm :  $\pm$  1.30

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 336.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 10.60  
Rated speed rpm : 930  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1000  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50



Rated speed rpm : 1100

---

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 150  
CRT mm min. :  $>$  6.00

#### Testing:

Rated speed rpm : 250  
rack travel mm : 4.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 400  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 680  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

#### Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

#### LOW IDLE

Rated speed rpm : 250  
Rack travel in mm : 4.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.07.97  
Test oil : ISO 4113

Combination No. : 0 402 648 812M

Injection pump  
Pump designation : PE8P120A320LS7301  
: -10  
EP type number : 0 412 628 851

Governor  
Governor design. : RQ300/1050PA717  
Governor no. : 0 421 801 258

Cust. part No. :

Customer-spec. information  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 300

Rack travel in mm : 6.40  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 6.25  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.90  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
 guide sleeve  
 travel mm : 6.15  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
 guide sleeve  
 travel mm : 6.05  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 9.45  
 Tolerance mm :  $\pm$  0.15

GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 13.40  
 Rated speed rpm : 1092  
 Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
 Rated speed rpm : 1150  
 Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. :  $>$  7.50

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.40  
 Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
 Rated speed rpm : 399  
 Tolerance 1/min :  $\pm$  20

TORQUE CONTROL

Rated speed rpm : 1050  
 rack travel mm : 14.40  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 850  
 rack travel mm : 14.40  
 Tolerance mm :  $\pm$  0.15

---

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 600  
Pressure hPa : 1150

## MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 310  
rack travel mm : -3.10  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 470  
rack travel mm : -1.60  
Tolerance mm :  $\pm 0.10$

---

## Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

## FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 14.0$

---

## LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.40  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 648 974  
Injection pump  
Pump designation : PE8P120A320LS7875  
EP type number : 0 412 628 881  
Governor  
Governor design. : RQ250/1150PA1122  
Governor no. : 0 421 801 704

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-8TC

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 16.00  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

Rated speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1207  
guide sleeve  
travel mm : 6.36  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.39  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 382  
guide sleeve  
travel mm : 5.26

Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1370  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

##### CONTROL LEVER

control lever  
position degree : 34.0  
tolerance degree : ± 4.0

control lever  
position degree : 95.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 1202  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1280

Tolerance 1/min : + 15  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

control lever  
position degree : 14.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 9.20

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm : + 0.10  
  
rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min : + 20

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 13.60  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -

rack travel mm : 9.00  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 650  
rack travel mm : 12.30  
Tolerance mm : + 0.20  
  
Pressure hPa : 250  
rack travel mm : 10.00  
Tolerance mm : + 0.05

---

#### Start interlock

Rated speed rpm : > 205  
Rated speed rpm : < 240

Check  
speed 1/min : > 185

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0



---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.07.97  
Test oil : ISO 4113

Combination No. : 0 402 736 908

Injection pump  
Pump designation : PES6P120A120RS7413  
EP type number : 0 412 726 962

Governor  
Governor design. : RQV350...1250PA1280K  
Governor no. : 0 421 815 521

Cust. part No. : 3283516

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 260  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

°NW after s.o.d. : 5.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 360

Rack travel in mm : 6.70  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1314  
guide sleeve  
travel mm : 10.36  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.83  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 870  
guide sleeve  
travel mm : 6.06  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1540  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1360

Rack travel in mm : 11.40  
Tolerance mm :  $\pm$  2.70

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 11.40  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1385  
Tolerance 1/min :  $\pm$  15  
Check  
speed 1/min :  $\pm$  20

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1500

---

#### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. :  $>$  9.40

#### Testing:

Rated speed rpm : 360  
rack travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1100  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1500  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1250  
Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 750  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  320

Check  
speed 1/min :  $>$  80

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm3/1000S. : +- 4.0

---

#### STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : +- 0.50  
Del. quantity  
cm3/1000 strokes : 105.0  
Tolerance  
cm3/1000 strokes : +- 20.0  
Check tolerance  
cm3/1000S. : +- 24.0

---

#### LOW IDLE

Rated speed rpm : 360  
Rack travel in mm : 6.70  
Tolerance mm : +- 0.10  
Del. quantity  
cm3/1000 strokes : 25.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 7.0  
Check tolerance  
cm3/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.05.97  
Test oil : ISO 4113

Combination No. : 0 402 736 909

Injection pump  
Pump designation : PES6P120A120RS7413  
EP type number : 0 412 726 962

Governor  
Governor design. : RQV350...1250PA1281K  
Governor no. : 0 421 815 522

Cust. part No. : 3283517

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA  
Power KW : 173.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 125  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 5.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.70  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 360

Rack travel in mm : 6.40  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1315  
guide sleeve  
travel mm : 10.39  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.05  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 860  
guide sleeve  
travel mm : 6.01  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1540  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 13.10  
Tolerance mm :  $\pm$  2.70

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 1290  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1390  
Tolerance 1/min :  $\pm$  15  
Check  
speed 1/min :  $\pm$  20

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1500

---

LOW IDLE

control lever  
position degree : 78.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 24.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. :  $>$  8.60

Testing:

Rated speed rpm : 360  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250  
Pressure hPa : 1500  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1250  
Pressure hPa : -  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.20

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MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 1050  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 400  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.05

---

Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  300

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  320

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Set starting CRT at K-cam.



Rated speed rpm : 100  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 360  
Rack travel in mm : 6.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

## Note remarks

Spread



Rated speed rpm	:	600
Tolerance mm	:	± 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	:	285.0
Tolerance cm <sup>3</sup> /1000 strokes	:	± 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 4.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

Rated speed rpm	:	300
Rack travel in mm	:	-7.60
Tolerance mm	:	± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	23.0
Tolerance cm <sup>3</sup> /1000 strokes	:	± 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 5.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance cm <sup>3</sup> /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	1122
guide sleeve travel mm	:	6.36
Tolerance mm	:	± 0.15
Rated speed rpm	:	300
guide sleeve travel mm	:	2.18
Tolerance mm	:	± 0.20
Rated speed rpm	:	1050
guide sleeve travel mm	:	6.00

Tolerance mm	:	± 0.10
Rated speed rpm	:	401
guide sleeve travel mm	:	5.00
Tolerance mm	:	± 0.10
Rated speed rpm	:	480
guide sleeve travel mm	:	6.00
Tolerance mm	:	± 0.10
Rated speed rpm	:	1330
guide sleeve travel mm	:	11.50
Tolerance mm	:	± 0.50

GUIDE SLEEVE POSITION

control lever position degree	:	109
Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	600
Aneroid pressure hPa	:	1000
Del. quantity cm <sup>3</sup> /1000 strokes	:	285.0
Tolerance cm <sup>3</sup> /1000 strokes	:	± 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 4.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

CONTROL LEVER

control lever position degree	:	276.0
tolerance degree	:	± 4.0
RATED SPEED		
rack travel mm	:	-1.00
Rated speed rpm	:	1115
Tolerance 1/min	:	± 15
rack travel mm	:	-9.40

Rated speed rpm : 1240  
Tolerance 1/min :  $\pm$  5  
  
rack travel mm : -12.90  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 255.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
  
CRT mm min. :  $>$  -4.90

#### Testing:

Rated speed rpm : 300  
rack travel mm : -7.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : -11.30  
Rated speed rpm : 395  
Tolerance 1/min :  $\pm$  20

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : -2.45  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400  
rack travel mm : -0.70  
Tolerance mm :  $\pm$  0.15  
  
Pressure hPa : 240  
rack travel mm : -1.65  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  195

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 293.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : -7.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.07.97  
Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 925

Governor  
Governor design. : RQ275/1050PA1275  
Governor no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR062045 F/C41  
Power KW : 152.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 220  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

°NW after s.o.d. : -0.95  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## CRT ZERO POSITION

Rack travel in mm : 11.70  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1050

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : -6.10  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122  
guide sleeve  
travel mm : 7.06  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.44  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 648  
guide sleeve  
travel mm : 6.18  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 375  
guide sleeve  
travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 873  
guide sleeve  
travel mm : 6.52  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 500

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0



---

## CONTROL LEVER

control lever  
position degree : 276.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1115  
Tolerance 1/min :  $\pm$  5

rack travel mm : -7.70  
Rated speed rpm : 1205  
Tolerance 1/min :  $\pm$  15

rack travel mm : -11.20  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 256.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. :  $<$  -4.20

### Testing:

Rated speed rpm : 275  
rack travel mm : -6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : -9.60  
Rated speed rpm : 375  
Tolerance 1/min :  $\pm$  20

---

## TORQUE CONTROL

Rated speed rpm : 1050

Rated speed rpm : 600  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 0.80  
Tolerance mm :  $\pm$  0.20

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.20

### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 160  
rack travel mm : -0.15  
Tolerance mm :  $\pm$  0.05

---

### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  195

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  215

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : -6.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 746 609C

Injection pump  
Pump designation : PES6P130A720RS7411  
EP type number : 0 412 736 808

Governor  
Governor design. : RQ275/950PA1274  
Governor no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information  
Customer : RABA  
Motor : siehe Bemerkung

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-50-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.20  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 24.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.54  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.06  
Tolerance mm : + 0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 355  
guide sleeve  
travel mm : 4.25  
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1290  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1143

Rack travel in mm : 12.10  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm3/1000 strokes : 263.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 34.0  
tolerance degree : + 4.0

control lever  
position degree : 95.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 12.10  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 11.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. :  $>$  6.80

### Testing:

Rated speed rpm : 275  
rack travel mm : 4.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 335  
Tolerance 1/min :  $\pm$  20

---

## TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.10  
tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.20

### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 380  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
rack travel mm : 20.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.07.97

Test oil : ISO 4113

Combination No. : 0 402 746 650

## Injection pump

Pump designation : PES6P120A320RS7344

EP type number : 0 412 726 914

## Governor

Governor design. : RQ275/1050PA999-6

Governor no. : 0 421 801 785

Cust. part No. : CCEP 5151A 66-230

## Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 062045 M41

Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

## Overflow quantity

min. l/h : 145

Tolerance l/h : ± 10.0

## Test nozzle holde

assembly : 1 688 901 105

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.50

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

\*NW after s.o.d. : -0.15

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

## betw. rack trav.

mm : 21.00

## and maximum rack

travel : 11.00

Difference ° CS : 2.25

---

#### CRT ZERO POSITION

Rack travel in mm : 11.60  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 600

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

Rated speed rpm : 275

---

Rack travel in mm : -7.00  
Tolerance mm :  $\pm$  0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

---

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131  
guide sleeve  
travel mm : 6.38  
Tolerance mm :  $\pm$  0.10

---

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.80  
Tolerance mm :  $\pm$  0.10

---

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

---

Rated speed rpm : 306  
guide sleeve  
travel mm : 2.99  
Tolerance mm :  $\pm$  0.10

---

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

---

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

---

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

#### CONTROL LEVER

---



control lever  
position degree : 274.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1135  
Tolerance 1/min :  $\pm$  5

rack travel mm : -7.60  
Rated speed rpm : 1240  
Tolerance 1/min :  $\pm$  15

rack travel mm : -11.10  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 251.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. :  $<$  -5.80

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : -9.50  
Rated speed rpm : 365  
Tolerance 1/min :  $\pm$  20

---

#### TORQUE CONTROL

Rated speed rpm : 600  
  
Rated speed rpm : 1050  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : -3.65  
Tolerance mm :  $\pm$  0.30

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560  
rack travel mm : -1.25  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 320  
rack travel mm : -2.75  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  225

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
  
Rack travel in mm : -7.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.07.97  
Test oil : ISO 4113

Combination No. : 0 402 746 986

Injection pump  
Pump designation : PES6P120A720RS7224  
: -2  
EP type number : 0 412 726 893

Governor  
Governor design. : RQ275/1050PA1021-3  
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8460.41.731

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (G) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1103

Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1350

##### LOW IDLE

control lever

position degree : 72.0

tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. :  $>$  6.50

Testing:

Rated speed rpm : 275

rack travel mm : 5.00

Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min :  $\pm$  20

##### TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 12.65

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600

rack travel mm : 12.70

Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.70  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 290  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 580  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

---

Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  215

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  235

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 275  
  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.07.97  
Test oil : ISO 4113

Combination No. : 0 402 796 820

Injection pump  
Pump designation : PES6P120A720LS7410  
EP type number : 0 412 726 957

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 038

Cust. part No. : 0260744902

Customer-spec. information  
Customer : MTU  
Motor : 6-R-183  
Power KW : 441.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.00  
Tolerance mm : ± 1.00

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min-1, Uact = 2.5 V

## TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.  
CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4

Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1150  
Uact V : 3.500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 362.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 750  
Uact V : 3.500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 423.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 6.0

#### TEST POINT L1

Rated speed rpm : 350  
Uact V : 1.340  
Tolerance Volt : +/- 0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 846 081

Injection pump  
Pump designation : PE6P120A320RS8044  
EP type number : 0 412 826 036

Governor  
Governor design. : RQV300...950PA1355K  
Governor no. : 0 421 815 962

Cust. part No. : 11127026  
: -P03 v.04.97

Customer-spec. information  
Customer : VCE  
Motor : TD122KLE  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.80



Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1037

guide sleeve  
travel mm : 9.86  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 300

guide sleeve  
travel mm : 1.61  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 773

guide sleeve  
travel mm : 6.81  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 500

guide sleeve  
travel mm : 4.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1130

Rack travel in mm : 11.62  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 118.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 11.80  
Rated speed rpm : 1015  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1110  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1210

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. :  $>$  9.00

#### Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 850  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 800  
Pressure hPa : 1500  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
Pressure hPa : -  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 700  
rack travel mm : 2.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 260  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm :  $\pm$  0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 80.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance

cm<sup>3</sup>/1000s. :  $\pm$  6.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 946 013  
  
Injection pump  
Pump designation : PES6P120A320RS8028  
EP type number : 0 412 926 021  
  
Governor  
Governor design. : RQV275...1250PA1189K  
Governor no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

Customer-spec. information  
Customer : RENAULT V.I.  
Motor : MIDR 06.02.26Y41  
Power KW : 184.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 078  
  
Inlet press. bar : 2.5  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 11.00  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

\*NW after s.o.d. : -0.25  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 2.25

---

#### CRT ZERO POSITION

Rack travel in mm : 14.40  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1250

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : -7.40  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 47.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1332  
guide sleeve  
travel mm : 10.07  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.10  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 912  
guide sleeve  
travel mm : 6.79  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 412  
guide sleeve  
travel mm : 2.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 462  
guide sleeve  
travel mm : 3.16  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1630  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1420

Rack travel in mm : 13.50  
Tolerance mm :  $\pm$  1.50

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

## CONTROL LEVER

control lever  
position degree : 303.0  
tolerance degree :  $\pm$  4.0

## RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1325  
Tolerance 1/min :  $\pm$  15

rack travel mm : -10.40  
Rated speed rpm : 1480  
Tolerance 1/min :  $\pm$  5

rack travel mm : -13.90  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1600

---

## LOW IDLE

control lever  
position degree : 250.0  
tolerance degree :  $\pm$  4.0

## Testing:

Rated speed rpm : 275  
rack travel mm : -7.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. :  $<$  -6.60

Rated speed rpm : 380

---

## TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -4.10  
Tolerance mm :  $\pm$  0.25

---

## ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 1250  
Pressure hPa : 1600  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
Pressure hPa : -  
rack travel mm : -4.40  
Tolerance mm :  $\pm$  0.20

## MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 240  
rack travel mm : -3.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 480  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.05

---

## Start interlock

Rated speed rpm :  $>$  175  
Rated speed rpm :  $<$  240

Check  
speed 1/min :  $>$  155  
Check  
speed 1/min :  $<$  260

---

## FUEL DELIVERY CHARACTERISTICS

---

### Aneroid pressure

hPa : 1600  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

---

### Aneroid pressure

hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 181.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

# STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 95.0  
Tolerance  
cm3/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm3/1000S. :  $\pm$  19.0

---

# LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : -7.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm3/1000 strokes : 47.0  
Tolerance  
cm3/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm3/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.03.97  
Test oil : ISO 4113

Combination No. : 0 402 996 002

Injection pump  
Pump designation : PE6P120A720LS8032  
EP type number : 0 412 926 023

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 025

Cust. part No. : 1364497

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1201

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 180.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1



---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 700  
Uact V : 3.400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 365.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 11.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 950  
Uact V : 3.400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 322.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 10.0

#### TEST POINT L1

Rated speed rpm : 250  
Uact V : 1.400  
Tolerance Volt : +/- 0.060  
Check tolerance  
Volt : +/- 0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113

Combination No. : 0 403 474 021

Injection pump  
Pump designation : PES4MW100/720RS1181  
EP type number : 0 413 404 107

Governor  
Governor design. : RSV400...1000MW1A348  
Governor no. : 0 420 085 183

Cust. part No. : 9880882

Customer-spec. information  
Customer : LIEBHERR  
Motor : D924T-E A2  
Power KW : 120.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 4.50

Tolerance mm :  $\pm$  0.20

Del. quantity

cm3/1000 strokes : 25.0

Tolerance

cm3/1000 strokes :  $\pm$  2.0

Check tolerance

cm3/1000S. :  $\pm$  4.5

Speed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm :  $\pm$  0.35

governor spring  
pre-tension  
click setting x : 3.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1250  
Del. quantity  
cm3/1000 strokes : 176.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0  
Speed

Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 12.20  
Rated speed rpm : 915  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 975  
Tolerance 1/min :  $\pm$  10

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1100

rack travel mm : 4.00  
Rated speed rpm : 980  
Tolerance 1/min :  $\pm$  10

#### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 550  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.20

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.20

Tolerance mm	: + 0.05
Rated speed rpm	: 500
rack travel mm	: 13.20
Tolerance mm	: + 0.10
Rated speed rpm	: 600
rack travel mm	: 13.25
Tolerance mm	: + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	: 550
Pressure hPa	: -
rack travel mm	: 12.20
Tolerance mm	: + 0.05
Rated speed rpm	: 550
Pressure hPa	: 1250
rack travel mm	: 13.20
Tolerance mm	: + 0.05

##### MEASUREMENT

Rated speed rpm	: 550
Pressure hPa	: 550
rack travel mm	: 12.45
Tolerance mm	: + 0.05
Pressure hPa	: 640
rack travel mm	: 13.05
Tolerance mm	: + 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	: 1250
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 178.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 5.0
Spread Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 9.0

Aneroid pressure hPa	: 1250
Rated speed rpm	: 600
Del. quantity cm3/1000 strokes	: 180.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 5.0

#### Aneroid pressure

hPa	: -
Rated speed rpm	: 550
Del. quantity cm3/1000 strokes	: 156.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 4.0

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm	: 100
rack travel mm	: 20.00
Tolerance mm	: + 1.00
Del. quantity cm3/1000 strokes	: 135.0
Tolerance cm3/1000 strokes	: + 5.0
Check tolerance cm3/1000S.	: + 8.0

#### LOW IDLE

Rated speed rpm	: 550
Rack travel in mm	: 4.50
Tolerance mm	: + 0.20
Del. quantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 4.5
Spread Tolerance cm3/1000 strokes	: 3.5

Check tolerance  
cm3/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113

Combination No. : 0 403 474 021F

Injection pump  
Pump designation : PES4MW100/72ORS1181  
EP type number : 0 413 404 107

Governor  
Governor design. : RSV400...1000MW1A348  
Governor no. : 0 420 085 183

Cust. part No. :

Customer-spec. information  
Customer : LIEBHERR  
Motor : D924 T-E A2  
Power KW : 120.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.50  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 3.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 96.0

RATED SPEED  
rack travel mm : 12.20  
Rated speed rpm : 915  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 975  
Tolerance 1/min : ± 10

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1075

rack travel mm : 4.00  
Rated speed rpm : 980  
Tolerance 1/min : ± 10

#### LOW IDLE

control lever  
position degree : 78.0

#### Setting point w/out bumper spring

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

#### Testing:

Rated speed rpm : 550  
rack travel mm : 4.50  
Tolerance mm : ± 0.20

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.20  
Tolerance mm : ± 0.05



Rated speed rpm : 500  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
Pressure hPa : 1250  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 640  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Aneroid pressure  
hPa : 1250

Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 4.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 112  
  
Injection pump  
Pump designation : PES6MW100/720RS1225  
: -1  
EP type number : 0 413 406 220  
  
Governor  
Governor design. : RSV400...1000MW1A338  
: -1  
Governor no. : 0 420 085 184  
  
Cust. part No. : 9880791

## Customer-spec. information

Customer : LIEBHERR  
Motor : D 926 T-E A2  
Power KW : 164.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 049  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.51  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 14.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 13.05

Rated speed rpm : 1040

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : + 10

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1090

Tolerance 1/min : + 10

#### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

#### Testing:

Rated speed rpm : 400  
rack travel mm : 5.80  
Tolerance mm : + 0.10

---

**TORQUE CONTROL**

Rated speed rpm : 1000  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
Pressure hPa : 1200  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

**MEASUREMENT**

Rated speed rpm : 550

Pressure hPa : 565  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 650  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.05

---

**FUEL DELIVERY CHARACTERISTICS**

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

**LOW IDLE**

Rated speed rpm : 400  
  
Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000s. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113  
Combination No. : 0 403 476 151  
Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0 413 406 123  
Governor  
Governor design. : RSV350...1200MWOA405  
Governor no. : 0 420 085 294  
Cust. part No. : 0270742302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 118.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Presroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1180  
Rack travel in mm : 11.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity

cm<sup>3</sup>/1000 strokes : 12.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 5.25

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180

Aneroid pressure

hPa : 800

Del. quantity

cm<sup>3</sup>/1000 strokes : 89.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.65

Rated speed rpm : 1233

Tolerance 1/min : ± 3

rack travel mm : 4.00

Rated speed rpm : 1315

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1400

---

##### LOW IDLE

control lever

position degree : 81.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350

rack travel mm : 6.30

Tolerance mm : ± 0.25

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : ± 30

---

##### TORQUE CONTROL

Rated speed rpm : 1180

rack travel mm : 11.65

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : ± 0.10



Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 350  
rack travel mm : 1.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 275  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Check hydraulic start locking and  
unlocking device with 500...1000 hPa.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 350  
  
Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.07.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 275  
Injection pump  
Pump designation : PES6A95D410RS2471  
EP type number : 0 410 896 952  
Governor  
Governor design. : RSV325...1150A8C674  
: -3L  
Governor no. : 0 420 232 543  
Cust. part No. :

Customer-spec. information  
Customer : KHD  
Motor : BF6L913C  
Power KW : 132.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 1.95  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 11.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 6.80

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1250  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : ± 15

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### Testing:

Rated speed rpm : 325  
rack travel mm : 6.80  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 615  
Tolerance 1/min : ± 30

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 160  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.15  
  
Pressure hPa : 340  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 6.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.97  
Test oil : ISO 4113

Combination No. : 0 400 876 407

Injection pump  
Pump designation : PES6A95D41ORS2835  
EP type number : 0 410 896 896

Governor  
Governor design. : RSV650...1050A8C2263  
: -3L  
Governor no. : 0 420 232 586

Cust. part No. : 87 800 684

## Customer-spec. information

Customer : NH  
Motor : 7.5 L  
Power KW : 138.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 22.0

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 3.5

Spread

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm3/1000 strokes : 141.0  
Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 6.0

##### CONTROL LEVER

control lever  
position degree : 91.0  
tolerance degree : + 4.0

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1092  
rack travel mm : 11.80

Rated speed rpm : 1122  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

Rated speed rpm : 1093  
rack travel mm : 11.80

Rated speed rpm : 1123  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

Rated speed rpm : 1094  
rack travel mm : 11.80

Rated speed rpm : 1124  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

Rated speed rpm : 1095  
rack travel mm : 11.80

Rated speed rpm : 1125  
Tolerance 1/min : + 5

rack travel mm : 4.00  
rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1250

Rated speed rpm : 1096  
rack travel mm : 11.80

Rated speed rpm : 1126  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1250

Rated speed rpm : 1097  
rack travel mm : 11.80

Rated speed rpm : 1127  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 650  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

#### Testing:

Rated speed rpm : 650  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 780  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 960  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 325  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 550  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

#### LOW IDLE

Rated speed rpm : 650  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 076 753  
Injection pump  
Pump designation : PES6P120A72ORS3203  
EP type number : 0 412 026 728  
Governor  
Governor design. : RSV400...1100P2A534  
: -13  
Governor no. : 0 421 833 403  
Cust. part No. : RE50748

Customer-spec. information  
Customer : DEERE  
Motor : 6076 AF & HF  
Power KW : 186.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 457 413 010  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

°NW after s.o.d. : 10.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 99.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.20  
Rated speed rpm : 1155  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : ± 15

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.90  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400  
rack travel mm : 5.40  
Tolerance mm : ± 0.10

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 13.50

Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 850  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 590  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.20

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

F01

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

##### LOW IDLE

Rack travel in mm : 5.40  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.06.97  
Test oil : ISO 4113  
Combination No. : 0 402 076 755  
Injection pump  
Pump designation : PES6P110A320LS3318  
EP type number : 0 412 016 741  
Governor  
Governor design. : RSV350...750P4A561  
Governor no. : 0 421 833 406

Cust. part No. : 1820271C92

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-466  
Power KW : 185.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.4  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

F02

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery blocking  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.0

Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 5.70  
Tolerance mm : +- 0.10

Del. quantity  
cm3/1000 strokes : 40.0

Tolerance  
cm3/1000 strokes : +- 2.0

Check tolerance  
cm3/1000S. : +- 4.5

Spreed

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 219.0

F03

Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 94.0

tolerance degree : +- 4.0

#### RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 755

Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 795

Tolerance 1/min : +- 5

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 900

rack travel mm : 4.00  
Rated speed rpm : 800

Tolerance 1/min : +- 5

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : +- 0.10

#### TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 350  
  
Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113

Combination No. : 0 402 076 756

Injection pump  
Pump designation : PES6P100A320LS3317  
EP type number : 0 412 006 706

Governor  
Governor design. : RSV400...1200P5A587  
Governor no. : 0 421 833 446

Cust. part No. : 1820269C91

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-466  
Power KW : 204.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 105.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 13.60

Rated speed rpm : 1245  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1315  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : ± 5

---

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 400  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

---

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1200  
Pressure hPa : 1500  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.40  
Tolerance mm : ± 0.20



## MEASUREMENT

Rated speed rpm : 1200  
Pressure hPa : 650  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 240  
rack travel mm : 9.55  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

## LOW IDLE

Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 076 764  
  
Injection pump  
Pump designation : PES6P110A72ORS3083  
: -1  
EP type number : 9 410 231 027  
  
Governor  
Governor design. : RSV425...1100P2A582  
Governor no. : 0 421 833 439

Cust. part No. : RE23748

---

Customer-spec. information  
Customer : DEERE  
Motor : 6466 A  
Power KW : 161.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

F08

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

\*NW after s.o.d. : 13.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/100C strokes : 131.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

#### Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 100.0

F09

tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.00  
Rated speed rpm : 1160  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1240  
Tolerance 1/min : + 5

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min : + 15

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 425  
rack travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 425  
rack travel mm : 6.00  
Tolerance mm : + 0.10

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 13.20  
Tolerance mm : + 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.20  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.20  
Tolerance mm :  $\pm 0.10$

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 11.60  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 375  
rack travel mm : 12.55  
Tolerance mm :  $\pm 0.05$

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm 0.50$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0

#### Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm 10.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 15.0$

---

#### LOW IDLE

Rack travel in mm : 6.00  
Tolerance mm :  $\pm 0.10$

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113

Combination No. : 0 402 076 770

Injection pump  
Pump designation : PES6P110A320LS3318  
: -1

EP type number : 0 412 016 749

Governor  
Governor design. : RSV350...750P4A561  
: -1  
Governor no. : 0 421 833 451

Cust. part No. : 1823837C92

Customer-spec. information  
Customer : NAVISTAR  
Motor : DT-531  
Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 12.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

## Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 340

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

### CONTROL LEVER

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.20  
Rated speed rpm : 750  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 800  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 900

rack travel mm : 4.00  
Rated speed rpm : 805  
Tolerance 1/min : ± 5

### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

### Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 19.00

### Testing:

Rated speed rpm : 340  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

### TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 340  
  
Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113

Combination No. : 0 402 196 706

Injection pump  
Pump designation : PES6P120A72ORS3354  
EP type number : 0 412 026 781

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 029

Cust. part No. : RE 62643

Customer-spec. information  
Customer : DEERE  
Motor : 6081AF001  
Power KW : 187.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery blocking

°NW after s.o.d. : 8.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference ° CS : 2.50

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V



# TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max. 1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.880  
Del. quantity  
cm3/1000 strokes : 140.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Speed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700  
Uact V : 2.880  
Del. quantity  
cm3/1000 strokes : 141.5  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Rated speed rpm : 425  
Uact V : 1.610  
Del. quantity  
cm3/1000 strokes : 22.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.610  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 196 707  
  
Injection pump  
Pump designation : PES6P120A720RS3354  
EP type number : 0 412 026 781  
  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 029

Cust. part No. : RE 62645

Customer-spec. information  
Customer : DEERE  
Motor : 6031HF001  
Power KW : 203.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

F17

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery mark

\*NW after s.o.d. : 9.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference \* CS : 2.50

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 2.880  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 425  
Uact V : 1.610  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.610  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 196 708  
  
Injection pump  
Pump designation : PES6P120A720RS3362  
EP type number : 0 412 026 787

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 029

Cust. part No. : RE 64860

Customer-spec. information  
Customer : DEERE  
Motor : 6076ADW31  
Power KW : 140.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

F20

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery mark

°NW after s.o.d. : 7.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference ° CS : 3.25

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

#### (C) INJECTION PUMP WITH POSITIONER

##### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.800  
Del. quantity  
cm3/1000 strokes : 139.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Speed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700  
Uact V : 2.800  
Del. quantity  
cm3/1000 strokes : 141.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Rated speed rpm : 425  
Uact V : 1.580  
Del. quantity  
cm3/1000 strokes : 22.5  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.580  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 776 815  
  
Injection pump  
Pump designation : PES6P120A720RS7255  
EP type number : 0 412 726 881  
  
Governor  
Governor design. : RSV400...900P7A569  
Governor no. : 0 421 833 418

Cust. part No. : RE42226

Customer-spec. information  
Customer : DEERE  
Motor : 6101 AF010  
Power KW : 285.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 145  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

°NW after s.o.d. : 8.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.75  
Tolerance mm : ± 0.05

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 5.00

---

##### CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 14.10  
Rated speed rpm : 900  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 940  
Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1050

rack travel mm : 4.00  
Rated speed rpm : 980  
Tolerance 1/min :  $\pm$  15

---

##### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

##### Testing:

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

---

##### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 14.75  
Tolerance mm :  $\pm$  0.05

---

##### Start interlock

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

##### LOW IDLE

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 776 816  
  
Injection pump  
Pump designation : PES6P120A72ORS7255  
EP type number : 0 412 726 881  
  
Governor  
Governor design. : RSV400...1050POA547  
                  : -4  
Governor no. : 0 421 833 419  
  
Cust. part No. : RE46178

Customer-spec. information  
Customer : DEERE  
Motor : 6101 HFO10  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 079  
  
Inlet press. bar : 1.5  
  
Overflow quantity  
min. l/h : 145  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test Lines : 1 680 750 015

F26

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
°NW after s.o.d. : 8.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	259.5
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0
<hr/>	

Rack travel in mm : 5.30  
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

<hr/>	
control lever	
position degree :	- 3
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	3.50
<hr/>	

FULL LOAD DELIVERY AT FULL LOAD STOP

<hr/>	
Rated speed rpm :	1050
Aneroid pressure	
hPa :	1700
Del. quantity	
cm <sup>3</sup> /1000 strokes :	259.5
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
<hr/>	

<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0
<hr/>	

CONTROL LEVER

<hr/>	
control lever	
position degree :	97.0
tolerance degree :	+ 4.0
<hr/>	

RATED SPEED

<hr/>	
rack travel mm :	12.60
Rated speed rpm :	1100
Tolerance 1/min :	+ 5
<hr/>	

<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1160
Tolerance 1/min :	+ 5
<hr/>	

<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1250
<hr/>	

<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1170
Tolerance 1/min :	+ 15
<hr/>	

LOW IDLE

<hr/>	
control lever	
position degree :	72.0
tolerance degree :	+ 4.0
<hr/>	

Setting point w/out bumper spring

<hr/>	
Rated speed rpm :	400
rack travel mm :	5.80
Tolerance mm :	+ 0.10
<hr/>	

<hr/>	
Rated speed rpm :	100
<hr/>	

<hr/>	
CRT mm min. :	> 19.00
<hr/>	

Testing:

<hr/>	
Rated speed rpm :	400
rack travel mm :	5.30
Tolerance mm :	+ 0.10
<hr/>	

TORQUE CONTROL

<hr/>	
Rated speed rpm :	1050
rack travel mm :	13.65
Tolerance mm :	+ 0.05
<hr/>	

Rated speed rpm : 850  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1700  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 1345  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1090  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1700  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rack travel in mm : 5.30  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113

Combination No. : 0 402 796 813

Injection pump  
Pump designation : PES6P120A720RS7356  
EP type number : 0 412 726 919

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 017

Cust. part No. : RE 61658

Customer-spec. information  
Customer : DEERE  
Motor : 6081 HF001  
Power kW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min-1, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.030  
Del. quantity  
cm3/1000 strokes : 213.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 3.120  
Del. quantity  
cm3/1000 strokes : 237.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

#### TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.740



Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 796 819  
  
Injection pump  
Pump designation : PES6P120A720RS7407  
EP type number : 0 412 726 955  
  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 037

Cust. part No. : RE 65679

Customer-spec. information  
Customer : DEERE  
Motor : 6101HRW10  
Power KW : 266.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 077  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

G04

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 9.25  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende  
and maximum rack  
travel : 15.00

Difference \* CS : 3.75

---

(B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.  
CRT mm : 0.75

Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 3.120  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.740  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.07.96  
Test oil : ISO 4113  
Combination No. : 0 402 646 650  
Injection pump  
Pump designation : PE6P130A720RS7354  
EP type number : 0 412 636 835  
Governor  
Governor design. : RQV300...950PA1002  
: -2K  
Governor no. : 0 421 815 434  
Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8210.42.4000

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

G07

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

#### Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1007  
guide sleeve  
travel mm : 8.73  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.64  
Tolerance mm : ± 0.20

Rated speed rpm : 756  
guide sleeve  
travel mm : 6.16  
Tolerance mm : ± 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.78  
Tolerance mm : ± 0.25

Rated speed rpm : 1340

guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1185

Rack travel in mm : 12.00  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.10

Rated speed rpm : 995  
Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1110

Tolerance 1/min : ± 15  
Check

speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 375

---

### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.30

---

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 950  
Pressure hPa : 900  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
Pressure hPa : -  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  0.40

#### MEASUREMENT

Rated speed rpm : 950

Pressure hPa : 320  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 610  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.05

---

### Start interlock

Rated speed rpm :  $>$  180  
Rated speed rpm :  $<$  220

Check  
speed 1/min :  $>$  160  
Check  
speed 1/min :  $<$  240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

### LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 5.40

Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.07.97  
Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 925

Governor  
Governor design. : RQ275/1050PA1275  
Governor no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information  
Customer : RENAULT V.I.  
Motor : MIDR062045 F/C41  
Power KW : 152.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 220  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

\*NW after s.o.d. : -0.95  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## CRT ZERO POSITION

Rack travel in mm : 11.70  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1050

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : -6.10  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122  
guide sleeve  
travel mm : 7.06  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.44  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 648  
guide sleeve  
travel mm : 6.18  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 375  
guide sleeve  
travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 873  
guide sleeve  
travel mm : 6.52  
Tolerance mm :  $\pm$  0.10

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 500

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 276.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1115  
Tolerance 1/min :  $\pm$  5

rack travel mm : -7.70  
Rated speed rpm : 1205  
Tolerance 1/min :  $\pm$  15

rack travel mm : -11.20  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 256.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. :  $<$  -4.20

#### Testing:

Rated speed rpm : 275  
rack travel mm : -6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : -9.70  
Rated speed rpm : 365  
Tolerance 1/min :  $\pm$  20

---

#### TORQUE CONTROL

Rated speed rpm : 1050

Rated speed rpm : 600  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 0.80  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : -0.75  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 280  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 160  
rack travel mm : -0.15  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  195

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
  
Rack travel in mm : -6.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.08.97  
Test oil : ISO 4113  
Combination No. : F 000 409 888  
Injection pump  
Pump designation : PES6A80D320RS1271  
EP type number : 9 400 083 058  
Governor  
Governor design. : RSV350...1400A2C2179  
: R  
Governor no. : 9 420 083 281  
Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D229-6  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 003  
Outside diameter : 6.0

G15

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Beginning of delivery differende

and maximum rack  
travel : 10.50  
Tolerance mm : ± 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.25  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 61.0

Tolerance		
cm3/1000 strokes	: +- 0.5	
<hr/>		
Check tolerance		
cm3/1000S.	: +- 2.0	
<hr/>		
Spreed		
<hr/>		
Tolerance		
cm3/1000 strokes	: 2.5	
<hr/>		
Check tolerance		
cm3/1000S.	: 4.0	
<hr/>		
Rated speed rpm	: 400	
Rack travel in mm	: 7.20	
Tolerance mm	: +- 0.10	
Del. quantity		
cm3/1000 strokes	: 12.5	
Tolerance		
cm3/1000 strokes	: +- 1.5	
Check tolerance		
cm3/1000S.	: +- 3.5	
Spreed		
Tolerance		
cm3/1000 strokes	: 4.0	
Check tolerance		
cm3/1000S.	: 6.0	

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governor spring	
pre-tension	
click setting x	: 4.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1400
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 61.0

Tolerance	
cm3/1000 strokes	: +- 0.5
Check tolerance	
cm3/1000S.	: +- 2.0
Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 4.0

---

CONTROL LEVER

control lever	
position degree	: 90.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 9.20
Rated speed rpm	: 1435
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1510
Tolerance 1/min	: +- 15
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1650

---

LOW IDLE

control lever	
position degree	: 63.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 6.70
Tolerance mm	: +- 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00

Testing:

Rated speed rpm	: 400
rack travel mm	: 7.20
Tolerance mm	: +- 0.10
rack travel mm	: 2.00
Rated speed rpm	: 640
Tolerance 1/min	: +- 30

---

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00

---

#### LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 7.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.04.97  
Test oil : ISO 4113

Combination No. : 0 400 846 598

Injection pump  
Pump designation : PES6A90D410RS2813  
EP type number : 0 410 896 089

Governor  
Governor design. : RQV300...1050AB1265L  
Governor no. : 0 420 212 234

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8065.25.094  
Power KW : 145.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.35  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : ± 2.5



## Speed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 7.0

Rated speed rpm : 400

Rack travel in mm : 8.30  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm3/1000 strokes : 12.0  
Tolerance  
cm3/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm3/1000 strokes : 4.5  
Check tolerance  
cm3/1000S. : 7.0

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE TRAVEL

Rated speed rpm : 740  
guide sleeve  
travel mm : 4.95  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 380  
guide sleeve  
travel mm : 1.85  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 400  
guide sleeve  
travel mm : 2.25  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 460  
guide sleeve  
travel mm : 2.85  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1105  
guide sleeve  
travel mm : 8.35  
Tolerance mm :  $\pm$  0.25

### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 9.50  
Tolerance mm :  $\pm$  2.70

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 80.0  
Tolerance  
cm3/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm3/1000S. :  $\pm$  2.5  
Speed  
Tolerance  
cm3/1000 strokes : 3.0  
Check tolerance  
cm3/1000S. : 7.0

### CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 11.20  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1205  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1320

### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 300  
CRT mm min. : > 10.80

#### Testing:

Rated speed rpm : 400  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  0.10  
  
Rated speed rpm : 525

#### TORQUE CONTROL

Dimension a mm : 1.30  
Rated speed rpm : 1050  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 13.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 850  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 580  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 540  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 320

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 340

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  2.5

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 8.30  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.04.97  
Test oil : ISO 4113

Combination No. : 0 400 846 600

Injection pump  
Pump designation : PES6A90D410RS2818  
EP type number : 0 410 896 091

Governor  
Governor design. : RQV300...1500AB1266L  
Governor no. : 0 420 212 236

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8060.25.670  
Power KW : 175.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.75

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 640  
guide sleeve  
travel mm : 3.45  
Tolerance mm : ± 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.15  
Tolerance mm : ± 0.25

Rated speed rpm : 435  
guide sleeve  
travel mm : 2.25  
Tolerance mm : ± 0.25

Rated speed rpm : 485  
guide sleeve  
travel mm : 2.55  
Tolerance mm : ± 0.25

Rated speed rpm : 1610  
guide sleeve  
travel mm : 8.35  
Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1740

Rack travel in mm : 11.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.30  
Rated speed rpm : 1595  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1755  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1870

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 10.60

Testing:

Rated speed rpm : 300  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

---

TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 300  
  
Rack travel in mm : 9.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.04.97  
Test oil : ISO 4113

Combination No. : 0 400 846 607

Injection pump  
Pump designation : PES6A90D410RS2813  
EP type number : 0 410 896 089

Governor  
Governor design. : RQV300...1050AB1265  
: -3L  
Governor no. : 0 420 212 241

Cust. part No. : 112069

## Customer-spec. information

Customer : IVECO-FIAT  
Motor : 8065.25.099  
Power KW : 135.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

## Spreed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 7.0

Rated speed rpm : 425

Rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm3/1000 strokes : 9.0

Tolerance  
cm3/1000 strokes :  $\pm$  2.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm3/1000 strokes : 4.5

Check tolerance  
cm3/1000S. : 7.0

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE TRAVEL

Rated speed rpm : 750  
guide sleeve  
travel mm : 5.05  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 380  
guide sleeve  
travel mm : 1.85  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 2.55  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 460  
guide sleeve  
travel mm : 2.85  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1130  
guide sleeve  
travel mm : 8.25  
Tolerance mm :  $\pm$  0.25

### GUIDE SLEEVE POSITION

G26

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 9.50  
Tolerance mm :  $\pm$  2.70

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700

Del. quantity  
cm3/1000 strokes : 78.0

Tolerance  
cm3/1000 strokes :  $\pm$  0.5

Check tolerance  
cm3/1000S. :  $\pm$  2.5

Spreed  
Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 7.0

### CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 11.70  
Rated speed rpm : 1125  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1320

### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring



Rated speed rpm : 325  
CRT mm min. : > 11.00

#### Testing:

Rated speed rpm : 425  
rack travel mm : 8.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 535

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 900  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 450  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 500  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

#### Start interlock

Rated speed rpm : > 290  
Rated speed rpm : < 340

Check  
speed 1/min : > 270  
Check  
speed 1/min : < 360

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  2.5

#### STARTING FUEL DELIVERY

ESS test: With 12 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 863 008  
  
Injection pump  
Pump designation : PES3A90D320/3RS2658  
EP type number : 0 410 893 004

Governor  
Governor design. : RSV325...1500A2C505  
                  : -3R  
Governor no. : 0 420 233 229

Cust. part No. : 1-7545

Customer-spec. information  
Customer : MWM  
Motor : D226B-3  
Power KW : 49.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

H01

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 2- 3  
  
Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Beginning of delivery difference  
and maximum rack  
travel : 9.00  
Difference °CS : 4.00

## BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0

Tolerance  
cm3/1000 strokes : +- 0.5

Check tolerance  
cm3/1000S. : +- 2.5

Spreed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 9.80

Tolerance mm : +- 0.10

Del. quantity  
cm3/1000 strokes : 49.5

Tolerance  
cm3/1000 strokes : +- 3.0

Check tolerance  
cm3/1000S. : +- 5.0

Spreed

Tolerance  
cm3/1000 strokes : 2.5

Check tolerance  
cm3/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 90.0

H02

Tolerance  
cm3/1000 strokes : +- 0.5

Check tolerance  
cm3/1000S. : +- 2.5

Spreed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 5.0

#### CONTROL LEVER

control lever  
position degree : 93.0  
tolerance degree : +- 4.0

#### RATED SPEED

rack travel mm : 10.20

Rated speed rpm : 1145

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1195

Tolerance 1/min : +- 15

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1375

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : +- 15

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 9.30

Tolerance mm : +- 0.10

#### Testing:

Rated speed rpm : 325

rack travel mm : 9.80

Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 510

Tolerance 1/min : +- 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.10

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 18.90  
Tolerance mm :  $\pm$  2.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0

---

#### LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 9.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113  
Combination No. : 0 400 863 019  
Injection pump  
Pump designation : PES3A90D320/3RS2826  
EP type number : 0 410 893 007  
Governor  
Governor design. : RSV325...1150A5C505  
                  : -5R  
Governor no. : 0 420 233 289  
Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : TD 226 B3

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

H04

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 2- 3  
Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Beginning of delivery difference  
and maximum rack  
travel : 9.00  
Difference ° CS : 4.00

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 9.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm3/1000S. : +- 2.5

Spreed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 5.70

Tolerance mm : +- 0.10

Del. quantity  
cm3/1000 strokes : 8.0

Tolerance  
cm3/1000 strokes : +- 3.0

Check tolerance  
cm3/1000S. : +- 5.0

Spreed  
Tolerance

cm3/1000 strokes : 2.5

Check tolerance  
cm3/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 3.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 68.0  
Tolerance  
cm3/1000 strokes : +- 0.5

Check tolerance  
cm3/1000S. : +- 2.5  
Spreed  
Tolerance  
cm3/1000 strokes : 3.0  
Check tolerance  
cm3/1000S. : 5.0

#### CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : +- 4.0

#### RATED SPEED

rack travel mm : 8.90  
Rated speed rpm : 1205  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1410

rack travel mm : 4.00  
Rated speed rpm : 1260  
Tolerance 1/min : +- 15

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : +- 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 6.20  
Tolerance mm : +- 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 5.70  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min : +- 30

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113

Combination No. : 0 400 863 024

Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996

Governor  
Governor design. : RSV325...1250A5C917L  
Governor no. : 0 420 232 639

Cust. part No. : 0423 2328 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F3L912  
Power KW : 44.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.9

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 4.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 107.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1295

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1355

Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1530

rack travel mm : 4.00  
Rated speed rpm : 1380

Tolerance 1/min :  $\pm$  15

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00

Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. :  $>$  19.50

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50

Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 510

Tolerance 1/min :  $\pm$  30

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.9

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113  
Combination No. : 0 400 864 057  
Injection pump  
Pump designation : PES4A90D320/3RS2659  
EP type number : 0 410 894 028

Governor  
Governor design. : RSV325...1500A2C505  
: -2R  
Governor no. : 0 420 233 196

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : D226B-4  
Power KW : 73.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H10

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Beginning of delivery difference  
and maximum rack  
travel : 9.00  
Difference ° CS : 4.00

## BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 7.10  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 4.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### CONTROL LEVER

control lever  
position degree : 113.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 9.50  
Rated speed rpm : 1545  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1605  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1780

rack travel mm : 4.00  
Rated speed rpm : 1630  
Tolerance 1/min : + 15

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 6.60  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325  
rack travel mm : 7.10  
Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 495  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.10

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 7.10  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113

Combination No. : 0 400 864 094

Injection pump  
Pump designation : PES4A90D320/3RS2743  
EP type number : 0 410 894 034

Governor  
Governor design. : RSV325...1150A5C505  
: -5R  
Governor no. : U 420 233 289

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : TD226B-4  
Power KW : 63.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack  
travel : 9.00  
Difference ° CS : 4.00

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm3/1000S. : + 2.5

Spreed

Tolerance  
cm3/1000 strokes : 3.0

Check tolerance  
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 6.70

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 5.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring

pre-tension

click setting x : 3.20

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure

hPa : -

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance  
cm3/1000S. : + 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000S. : 5.0

#### CONTROL LEVER

control lever

position degree : 100.0

tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 8.50

Rated speed rpm : 1195

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1330

rack travel mm : 4.00

Rated speed rpm : 1245

Tolerance 1/min : + 15

#### LOW IDLE

control lever

position degree : 69.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 6.20

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 6.70

Tolerance mm : + 0.10

rack travel mm : 2.00



Rated speed rpm : 445  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 9.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 6.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 864 102  
  
Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995  
  
Governor  
Governor design. : RSV325...1250A5C861L  
Governor no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913\_NEU  
Power KW : 59.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 3- 4- 2  
  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 11.35  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
  
Spreed

Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 11.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spread  
Tolerance

cm3/1000 strokes : 5.5  
Check tolerance

cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure

hPa : -

Del. quantity  
cm3/1000 strokes : 76.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

---

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1295

Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1339

Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

Tolerance 1/min : + 15

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50

Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 473

Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.08.97  
Test oil : ISO 4113

Combination No. : 0 400 864 103

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C871L  
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913  
Power KW : 78.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 9.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm3/1000 strokes : 14.0  
Tolerance  
cm3/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm3/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm3/1000 strokes : 5.5  
Check tolerance  
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 87.0  
Tolerance  
cm3/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm3/1000S. :  $\pm$  3.0  
Speed  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 12.50  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1565

rack travel mm : 4.00  
Rated speed rpm : 1415  
Tolerance 1/min :  $\pm$  15

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. :  $>$  19.50

Testing:

Rated speed rpm : 325  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 605  
Tolerance 1/min :  $\pm$  30

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 300  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 9.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.08.97  
Test oil : ISO 4113

Combination No. : 0 400 864 104

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C877L  
Governor no. : 0 420 232 632

Cust. part No. : 0423 2047 KY

Customer spec. information  
Customer : KHD-DMI  
Motor : BF4L 913 C  
Power KW : 78.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.70  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1555

rack travel mm : 4.00  
Rated speed rpm : 1405  
Tolerance 1/min : ± 15

#### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 580  
Tolerance 1/min : ± 30

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.08.97  
Test oil : ISO 4113

Combination No. : 0 400 864 105

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...900A1C878L  
Governor no. : 0 420 232 633

Cust. part No. : 0423 2062 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913  
Power KW : 64.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 89.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 12.30  
Rated speed rpm : 895

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 940

Tolerance 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1090

rack travel mm : 4.00

Rated speed rpm : 955

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

##### Testing:

Rated speed rpm : 325

rack travel mm : 8.20

rack travel mm : 2.00

Rated speed rpm : 415

Tolerance 1/min : ± 30

##### TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 13.30

Rated speed rpm : 500

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 8.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.07.97  
Test oil : ISO 4113

Combination No. : 0 400 876 440

Injection pump  
Pump designation : PES6A90D410RS2757  
EP type number : 0 410 896 086

Governor  
Governor design. : RSV425...1075A1C2266  
: -2L  
Governor no. : 0 420 232 640

Cust. part No. : 99459159

## Customer-spec. information

Customer : IVECO-FIAT  
Motor : 8065.25.085  
Power KW : 104.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 12.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : +- 3.0

---

Spread

Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 425

Rack travel in mm : 7.50

Tolerance mm : +- 0.10

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : +- 2.0

Check tolerance  
cm3/1000S. : +- 4.5

Spread  
Tolerance  
cm3/1000 strokes : 5.5

Check tolerance  
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 4.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm3/1000 strokes : 102.0  
Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 3.0  
Spread  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 11.90  
Rated speed rpm : 1120  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1340

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : +- 15

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 425  
rack travel mm : 7.00  
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 425  
rack travel mm : 7.50  
Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 555  
Tolerance 1/min :  $\pm$  30

---

TORQUE CONTROL

Rated speed rpm : 1075  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 430  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 500  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 98.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -

J02

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 425  
Rack travel in mm : 7.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.06.95  
Test oil : ISO 4113

Combination No. : 0 400 866 189

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number : 9 410 230 025

Governor  
Governor design. : RSV400...1100A0C2190  
: -65R  
Governor no. : 0 420 233 304

Cust. part No. : 3921145

Customer-spec. information  
Customer : CDC  
Motor : 6 CTA 8.3ltr  
Power KW : 174.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rack travel in mm : 5.60  
Tolerance mm : ± 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

J04

control lever  
position degree : 95.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1215  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : ± 15

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 21.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 400  
rack travel mm : 5.60  
Tolerance mm : ± 0.10

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  15.0

---

LOW IDLE

Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.10

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.07.97  
Test oil : ISO 4113

Combination No. : 0 402 196 705

Injection pump  
Pump designation : PES6P120A720RS3347  
EP type number : 0 412 026 777

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 029

Cust. part No. : RE 63514

Customer-spec. information  
Customer : DEERE  
Motor : 6076 HRW35  
Power KW : 181.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 10.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

J07

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1100  
Uact V : 2.710  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 2.710  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### TEST POINT L1

Rated speed rpm : 425  
Uact V : 1.400

Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.08.97  
Test oil : ISO 4113

Combination No. : 0 402 736 848

Injection pump  
Pump designation : PES6P120A120RS7314  
EP type number : 0 412 726 901

Governor  
Governor design. : RQV400...1250PA964  
: -23K  
Governor no. : 0 421 815 374

Cust. part No. : 3921922

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 142.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 5.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 5.70  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 116.5  
tolerance degree :  $\pm$  6.0

##### RATED SPEED

rack travel mm : 13.00  
Rated speed rpm : 1300

Tolerance 1/min :  $\pm$  15  
Check

speed 1/min :  $\pm$  20

rack travel mm : 4.00  
Rated speed rpm : 1465

Tolerance 1/min :  $\pm$  5  
Check

speed 1/min :  $\pm$  10

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1550

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  6.0

Control lever difference  
Grad : 43.5  
tolerance degree :  $\pm$  6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. :  $>$  8.50

Testing:

Rated speed rpm : 420  
rack travel mm : 5.70

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 420

##### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.00

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800



rack travel mm : 12.60  
Tolerance mm : + 0.20  
  
Rated speed rpm : 1250  
rack travel mm : 13.90  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 1200

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 11.25  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1150  
  
Pressure hPa : 500  
rack travel mm : 13.15  
Tolerance mm : + 0.30

Pressure hPa : 375  
rack travel mm : 12.05  
Tolerance mm : + 0.20

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 315

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 325

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 141.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0  
Spreed

Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 1150  
Del. quantity  
cm3/1000 strokes : 112.5  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.75  
Tolerance mm : + 0.50  
Del. quantity  
cm3/1000 strokes : 155.0  
Tolerance  
cm3/1000 strokes : + 20.0  
Check tolerance  
cm3/1000S. : + 25.0

---

LOW IDLE

Rated speed rpm : 420  
  
Rack travel in mm : 5.70  
Tolerance mm : + 0.20  
Del. quantity  
cm3/1000 strokes : 13.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 5.0  
Spreed  
Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 736 867  
Injection pump  
Pump designation : PES6P120A120RS7350  
EP type number : 0 412 726 921  
Governor  
Governor design. : RQV400...1150PA1172K  
Governor no. : 0 421 815 438

Cust. part No. : 3928147,3934242(new)

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 142.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Start of delivery blocking  
\*NW after s.o.d. : 5.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 14.00  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 420

Rack travel in mm : 6.10

Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### CONTROL LEVER

control lever  
position degree : 116.5  
tolerance degree : + 6.0

#### RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1300

Tolerance 1/min : + 15

Check  
speed 1/min : + 20

rack travel mm : 4.00

Rated speed rpm : 1465

Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1550

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 6.0

#### Control lever difference

Grad : 43.5

tolerance degree : + 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 8.50

#### Testing:

Rated speed rpm : 420

rack travel mm : 6.10

Tolerance mm : + 0.20

Rated speed rpm : 420

---

#### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 14.00

Tolerance mm : + 0.05

Rated speed rpm : 800

rack travel mm : 12.60

Tolerance mm : + 0.20

Rated speed rpm : 1250  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1200

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 1150  
Pressure hPa : 500  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.30

Pressure hPa : 375  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.20

---

##### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  315

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  325

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -

Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 420  
Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 796 821  
Injection pump  
Pump designation : PES6P120A720RS7407  
EP type number : 0 412 726 955

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 017

Cust. part No. : RE 67492

Customer-spec. information  
Customer : DEERE  
Motor : 6101HZ013  
Power KW : 260.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 9.25  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 15.00

Difference \* CS : 3.75

---

(B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.  
CRT mm : 0.75

Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max. 1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 3.120  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.740  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.07.97  
Test oil : ISO 4113

Combination No. : 0 402 796 823

Injection pump  
Pump designation : PES6P120A720RS7356  
EP type number : 0 412 726 919

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 017

Cust. part No. : RE 67884

Customer-spec. information  
Customer : DEERE  
Motor : 6081 HRW 05  
Power KW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 9.25  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference  
and maximum rack  
travel : 15.00



Difference \* CS : 2.50

---

(B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75

Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 3.120  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.740  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.07.97  
Test oil : ISO 4113  
  
Combination No. : F 002 A0Z 006  
  
Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 G37 214  
  
Governor  
Governor design. : RSV475...1100A0C880R  
Governor no. : F 002 A20 206

Cust. part No. : 3930154

Customer-spec. information  
Customer : CDC  
Motor : 4BT3.9  
Power KW : 63.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 3- 4- 2  
  
Phasing : 0-90-180-270  
  
Start of delivery blocking  
  
\*NW after s.o.d. : 6.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.5

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.65

Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 20.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spread

Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 97.5

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 108.0

##### RATED SPEED

rack travel mm : 10.80

Rated speed rpm : 1155

Tolerance 1/min : + 5

rack travel mm : 6.00

Rated speed rpm : 1220

Tolerance 1/min : + 5

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1400

rack travel mm : 6.00

Rated speed rpm : 1220

Tolerance 1/min : + 15

##### LOW IDLE

control lever  
position degree : 89.0

Control lever difference

Grad : 19.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.15

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475

rack travel mm : 5.65  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Rack travel in mm : 5.65  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.07.97  
Test oil : ISO 4113  
  
Combination No. : F 002 A0Z 071  
  
Injection pump  
Pump designation : PES6A95D320/3RS2928  
EP type number : F 002 A10 019  
  
Governor  
Governor design. : RSV450...900A4C949R  
Governor no. : F 002 A20 247

Cust. part No. : 3933099

Customer-spec. information  
Customer : CDC  
Motor : 6CT 8.3  
Power KW : 104.3

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85  
Tolerance mm : ± 0.05

Del. quantity	
cm <sup>3</sup> /1000 strokes	: 109.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.5

Rated speed rpm	: 425
Rack travel in mm	: 9.00
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 32.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring	
pre-tension	
click setting x	: 3.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
-----------------	-------

J25

Aneroid pressure	
hPa	: -
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 109.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.5

#### CONTROL LEVER

control lever	
position degree	: 108.5
tolerance degree	: ± 4.0

#### RATED SPEED

rack travel mm	: 10.80
Rated speed rpm	: 945
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 995
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1050

rack travel mm	: 4.00
Rated speed rpm	: 1000
Tolerance 1/min	: ± 5

#### LOW IDLE

control lever	
position degree	: 88.0
tolerance degree	: ± 4.0

Control lever difference	
Grad	: 20.5
tolerance degree	: ± 6.0

#### Setting point w/out bumper spring

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
-------------	-----------

Testing:

Rated speed rpm : 425  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 425  
Rack travel in mm : 9.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.08.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 866 214  
  
Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -4  
EP type number : 9 410 230 030  
  
Governor  
Governor design. : RSV450...1100AOC2190  
: -84R  
Governor no. : 0 420 233 323

Cust. part No. : 3921095

## Customer-spec. information

Customer : CDC  
Motor : 6CT830  
Power KW : 134.2

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	:	104.5
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	± 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	± 3.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	4.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	6.5
<hr/>		

Rated speed rpm	:	450
Rack travel in mm	:	5.80
Tolerance mm	:	± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	18.5
Tolerance cm <sup>3</sup> /1000 strokes	:	± 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 4.5
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
<hr/>		
Rack travel in mm	:	0.50
Tolerance mm	:	± 0.20
<hr/>		
governor spring pre-tension click setting x	:	4.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1100
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Aneroid pressure hPa	:	-
Del. quantity cm <sup>3</sup> /1000 strokes	:	104.5
Tolerance cm <sup>3</sup> /1000 strokes	:	± 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 3.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	4.0
Check tolerance cm <sup>3</sup> /1000S.	:	6.5

#### CONTROL LEVER

control lever position degree	:	103.0
tolerance degree	:	± 4.0

RATED SPEED		
rack travel mm	:	10.20
Rated speed rpm	:	1145
Tolerance 1/min	:	± 5

rack travel mm	:	4.00
Rated speed rpm	:	1225
Tolerance 1/min	:	± 5

rack travel mm	:	0.85
Tolerance mm	:	± 0.55
Rated speed rpm	:	1300

rack travel mm	:	4.00
Rated speed rpm	:	1230
Tolerance 1/min	:	± 15

#### LOW IDLE

control lever position degree	:	85.0
tolerance degree	:	± 4.0

Control lever difference		
Grad	:	18.0
tolerance degree	:	± 4.0

#### Setting point w/out bumper spring

Rated speed rpm	:	450
rack travel mm	:	5.30
Tolerance mm	:	± 0.10

Rated speed rpm	:	100
-----------------	---	-----

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 113.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

LOW IDLE

Rated speed rpm : 450  
Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5

K01

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.08.95  
Test oil : ISO 4113  
Combination No. : 0 400 876 399  
Injection pump  
Pump designation : PES6A100D410RS2754  
EP type number : 0 410 806 002  
Governor  
Governor design. : RSV425...1100A0C2234  
Governor no. : C 420 232 577

Cust. part No. : RE51910

## Customer-spec. information

Customer : DEERE  
Motor : 6076TRW01  
Power kW : 106.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2!!!!

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

K02

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 13.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Difference \* CS : 7.00

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 425

Rack travel in mm : 5.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 8.70

Rated speed rpm : 1150

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min : ± 15

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 425

rack travel mm : 5.30

Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.10

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.10

Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

LOW IDLE

K04

Rated speed rpm : 425

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.08.97  
Test oil : ISO 4113  
Combination No. : 0 402 776 814  
Injection pump  
Pump designation : PES6P120A32OLS7285  
EP type number : 0 412 726 892  
Governor  
Governor design. : RSV350...1000P4A564  
Governor no. : 0 421 833 413  
Cust. part No. : 1821048091

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-531  
Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.4  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

K05

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.90  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery blocking  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Speed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.90

Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 32.5

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 5.0

Speed

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm3/1000 strokes : 201.0

K06

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Speed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 111.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 11.80

Rated speed rpm : 1055

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1105

Tolerance 1/min : + 5

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1150

rack travel mm : 4.00

Rated speed rpm : 1110

Tolerance 1/min : + 5

#### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.90  
Tolerance mm : + 0.10

#### TORQUE CONTROL

Rated speed rpm : 1000



rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000  
Pressure hPa : 1500  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
Pressure hPa :  
rack travel mm : 7.90  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 850  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 8.95  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.90  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.08.97  
Test oil : ISO 4113

Combination No. : 0 402 746 635

Injection pump  
Pump designation : PES6P120A72ORS7366  
EP type number : 0 412 726 933

Governor  
Governor design. : RQV275...1100PA1356K  
Governor no. : 0 421 815 557

Cust. part No. :

## Customer-spec. information

Customer : IVECO-FRANCE  
Motor : 8460.41T.2036  
Power KW : 185.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Check  
tolerance \*NW : ± 0.40

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155  
guide sleeve

travel mm : 9.76  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 275  
guide sleeve

travel mm : 1.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 791  
guide sleeve

travel mm : 6.42  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 460  
guide sleeve

travel mm : 3.77

K09

Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1440

guide sleeve

travel mm : 13.50

Tolerance mm :  $\pm$  0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 1200

Del. quantity

cm<sup>3</sup>/1000 strokes : 202.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever

position degree : 116.0

tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1145

Tolerance 1/min :  $\pm$  5

Check

speed 1/min :  $\pm$  10

rack travel mm : 4.00

Rated speed rpm : 1220

Tolerance 1/min :  $\pm$  15

Check

speed 1/min :  $\pm$  20

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1350

##### LOW IDLE

control lever

position degree : 75.0

tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 175  
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 275  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.50

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 600  
  
Pressure hPa : 280  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 410  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.10

K10

Start interlock

Rated speed rpm : > 180  
Rated speed rpm : < 220

Check  
speed 1/min : > 160  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.08.97  
Test oil : ISO 4113

Combination No. : 0 402 846 078

Injection pump  
Pump designation : PE6P120A320RS8044  
EP type number : 0 412 826 036

Governor  
Governor design. : RQV300...1050PA1225  
Governor no. : 0 421 814 151

Cust. part No. : 11031993  
: -P02 v.03/97

Customer-spec. information  
Customer : VCE  
Motor : TD122KAE  
Power KW : 245.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131  
guide sleeve  
travel mm : 8.61  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.04  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1038  
guide sleeve  
travel mm : 7.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.65  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 10.60  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 10.60  
Rated speed rpm : 1120  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1260

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 5.40

#### Testing:

Rated speed rpm : 325  
rack travel mm : 3.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520  
rack travel mm : 1.30  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 290  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0



---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 06.08.97  
Test oil : ISO 4113

Combination No. : 0 402 846 079

Injection pump  
Pump designation : PE6P120A320RS8044  
EP type number : 0 412 826 036

Governor  
Governor design. : RQV300...1050PA1141  
Governor no. : 0 421 814 091

Cust. part No. : 11031994  
: -P02 V.06.97

## Customer-spec. information

Customer : VCE  
Motor : TD122KFE  
Power KW : 297.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 145  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

#### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 13.25  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 325

Rack travel in mm : 3.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131

guide sleeve  
travel mm : 8.63  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.04  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1038  
guide sleeve  
travel mm : 7.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.65  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 12.20  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

##### CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
 rack travel mm : 12.25  
 Rated speed rpm : 1120  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1180  
 Tolerance 1/min : + 15  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1260

#### LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
 position degree : 12.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.00

#### Testing:

Rated speed rpm : 325  
 rack travel mm : 3.60  
 Tolerance mm : + 0.10

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 700  
 rack travel mm : 13.25  
 Tolerance mm : + 0.05

Rated speed rpm : 700  
 rack travel mm : 12.55  
 Tolerance mm : + 0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500

Pressure hPa : 1500  
 rack travel mm : 14.00  
 Tolerance mm : + 0.25

Rated speed rpm : 500  
 Pressure hPa : -  
 rack travel mm : 10.00  
 Tolerance mm : + 0.15

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850  
 rack travel mm : 2.90  
 Tolerance mm : + 0.20

Pressure hPa : 300  
 rack travel mm : 0.25  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : > 230

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : > 250

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 700  
 Del. quantity  
 cm3/1000 strokes : 269.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0  
 Speed  
 Tolerance  
 cm3/1000 strokes : 10.0  
 Check tolerance  
 cm3/1000S. : 14.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 700  
 Del. quantity  
 cm3/1000 strokes : 188.0  
 Tolerance  
 cm3/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 3.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.08.97  
Test oil : ISO 4113

Combination No. : 0 403 486 106

Injection pump  
Pump designation : PES6MW100/321RS1232  
EP type number : 0 413 406 226

Governor  
Governor design. : RSV300...1150MWOA343  
: -2  
Governor no. : 0 420 085 210

Cust. part No. : 3-7262

Customer-spec. information  
Customer : MAN  
Motor : D0826LE 523  
Power KW : 169.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

K20

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 365

Rack travel in mm : 4.50

Tolerance mm : + 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 14.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance

cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring

pre-tension

click setting x : 5.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure

hPa : 1200

Del. quantity

cm<sup>3</sup>/1000 strokes : 165.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance

cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever

position degree : 103.0

tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 12.15

Rated speed rpm : 1180

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1230

Tolerance 1/min : + 15

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1400

##### LOW IDLE

control lever

position degree : 78.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 365

rack travel mm : 4.50

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 420

Tolerance 1/min : + 30

##### TORQUE CONTROL

Rated speed rpm : 925

rack travel mm : 13.50

Tolerance mm : + 0.05

Rated speed rpm : 1125  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.45  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 750  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 150  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1125  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 365  
  
Rack travel in mm : 4.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.08.97  
Test oil : ISO 4113  
Combination No. : 0 401 846 843  
Injection pump  
Pump designation : PE6P120A720RS3069  
EP type number : 0 411 826 712  
Governor  
Governor design. : RQV300...1000PA501  
: -4  
Governor no. : 0 421 813 609  
Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8210.22.371

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.55  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.10  
Tolerance mm : ± 0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.70  
Tolerance mm : ± 0.20

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.20

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.90  
Tolerance mm : ± 0.20

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.50  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1145  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 7.70

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.10

Rated speed rpm : 370

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 230  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 280  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 700  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -

K25

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.01.96  
Test oil : ISO 4113  
  
Combination No. : 0 401 846 882D  
  
Injection pump  
Pump designation : PE6P120A32ORS3206-1  
EP type number : 0 411 826 775

Governor  
Governor design. : RQ750PA783-1  
Governor no. : 0 421 801 432

Cust. part No. : 865037 P03 V. 02/95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 122

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Vibration  
damper  
(RoBo diaphragm) : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

K26

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 345.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 759  
guide sleeve  
travel mm : 6.78  
Tolerance mm : + 0.15

Rated speed rpm : 510  
guide sleeve  
travel mm : -6.60  
Tolerance mm : + 0.25

Rated speed rpm : 840  
guide sleeve  
travel mm : 16.84  
Tolerance mm : + 0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 850  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 345.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 94.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 825  
Tolerance 1/min : + 3

rack travel mm : 4.00  
Rated speed rpm : 885  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 950

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 822  
rack travel mm : 12.80

Rated speed rpm : 880  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 950

Rated speed rpm : 823  
rack travel mm : 12.80

Rated speed rpm : 881  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 950

Rated speed rpm : 824  
rack travel mm : 12.80

Rated speed rpm : 882  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 950

Rated speed rpm : 825  
rack travel mm : 12.80

Rated speed rpm : 883  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 950

Rated speed rpm : 826  
rack travel mm : 12.80

Rated speed rpm : 884  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 950

Rated speed rpm : 827  
rack travel mm : 12.80

Rated speed rpm : 885  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 950

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.05

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks:

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 07.08.97  
Test oil : ISO 4113

Combination No. : 0 401 849 760

Injection pump  
Pump designation : PE10P120A520/4LS3869  
EP type number : 0 411 829 713

Governor  
Goverrier design. : RQV250...900PA1198  
Governor no. : 0 421 814 117

Cust. part No. :

Customer-spec. information  
Customer : DHI  
Motor : D2840LE  
Power KW : 340.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8  
                  : - 7- 6- 3- 5  
                  : - 2

Phasing : 0-45-72-117-144  
          : -189-216-261-288  
          : -333

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 10

## BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 11.40  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 6.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 969  
guide sleeve  
travel mm : 8.42  
Tolerance mm : + 0.15

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.04  
Tolerance mm : + 0.20

Rated speed rpm : 750  
guide sleeve  
travel mm : 6.57  
Tolerance mm : + 0.25

Rated speed rpm : 1240  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1065

Rack travel in mm : 10.40  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

##### CONTROL LEVER

control lever  
position degree : 63.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 10.40  
Rated speed rpm : 945  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1060  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150



---

## LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 8.10

### Testing:

Rated speed rpm : 250  
rack travel mm : 6.90  
Tolerance mm : ± 0.10

Rated speed rpm : 330

---

### TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 11.40  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

---

### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 170

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 190

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

### LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.08.97  
Test oil : ISO 4113  
Combination No. : 0 402 046 350  
Injection pump  
Pump designation : PES6P110A720RS531  
EP type number : 0 412 016 076  
Governor  
Governor design. : RGV300...1100PA1016  
: -7  
Governor no. : 0 421 813 972  
Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8361.25.510

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

L04

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.05  
Tolerance mm : ± 0.50  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 10.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.70  
Tolerance mm : ± 0.20

Rated speed rpm : 1145  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.00  
Tolerance mm : ± 0.20

Rated speed rpm : 500  
guide sleeve  
travel mm : 2.80  
Tolerance mm : ± 0.30

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

L05

control lever  
position degree : - 1  
Rated speed rpm : 1240

Rack travel in mm : 9.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 9.30  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1220  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

rack travel mm : 4.00

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. :  $>$  7.70

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 430

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 430  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 465  
rack travel mm : 9.95  
Tolerance mm :  $\pm$  0.05

---

#### Start interlock

Rated speed rpm :  $>$  100

Check  
speed 1/min :  $>$  80

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 076 801  
  
Injection pump  
Pump designation : PES6P120A1320/5RS337  
: 2Y  
EP type number : 0 412 026 793  
  
Governor  
Governor design. : RSV350...1050P1A641  
Governor no. : 0 421 833 553  
  
Cust. part No. : 1382923

Customer-spec. information  
Customer : SCANIA  
Motor : DSI1172A,-C1157A

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rack travel in mm : 6.00  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 33.0  
tolerance degree : + 4.0

control lever  
position degree : 85.0  
tolerance degree : + 4.0

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 15.70

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

Rated speed rpm : 751  
rack travel mm : 15.70

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 850

Rated speed rpm : 752  
rack travel mm : 15.70

Rated speed rpm : 790  
Tolerance 1/min : + 4

rack travel mm : 4.00  
rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 850

Rated speed rpm : 753  
rack travel mm : 15.70

Rated speed rpm : 791  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 850

Rated speed rpm : 754  
rack travel mm : 15.70

Rated speed rpm : 792  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 850

Rated speed rpm : 755  
rack travel mm : 15.70

Rated speed rpm : 793  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 850

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 16.75  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 16.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 295  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.20  
Pressure hPa : 640  
rack travel mm : 16.00  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.04.97

Test oil : ISO 4113

Combination No. : 0 402 076 802

## Injection pump

Pump designation : PES6P120A1320/5RS337  
: 3

EP type number : 0 412 026 794

## Governor

Governor design. : RSV350...1050P8A643

Governor no. : 0 421 833 555

Cust. part No. : 1385930

## Customer-spec. information

Customer : SCANIA

Motor : DSI1171A,-C1156A

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

## Vibration

damper

(RoBo diaphragm) : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

## Test nozzle holde

assembly : 1 688 901 104

## Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

## Firing order

: 1- 5- 3- 6- 2-

: 4

## Phasing

: 0-60-120-180-240

: -300

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.75

## Barrel no.

: 1

## BASIC SETTING

Rated speed rpm : 700



---

Rack travel in mm : 15.35  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 6.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 104.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : 14.30

Rated speed rpm : 1095

Tolerance 1/min :  $\pm$  5

Check  
speed 1/min :  $\pm$  10

rack travel mm : 4.00

Rated speed rpm : 1195

Tolerance 1/min :  $\pm$  15

Check  
speed 1/min :  $\pm$  20

rack travel mm : 0.85

Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min :  $\pm$  15

Check  
speed 1/min :  $\pm$  20

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 23.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 555  
Tolerance 1/min : ± 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 15.35  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 15.35  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.10  
Tolerance mm : ± 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 510  
rack travel mm : 13.10  
Tolerance mm : ± 0.20

Pressure hPa : 780  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.10  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.08.97  
Test oil : ISO 4113

Combination No. : 0 402 086 702

Injection pump  
Pump designation : PES6P100B321RS3388  
EP type number : 0 412 006 714

Governor  
Governor design. : RSV400...1125FOA674  
Governor no. : 0 421 833 592

Cust. part No. : 51.11103-7564

## Customer-spec. information

Customer : MAN  
Motor : D0826 LE531  
Power KW : 191.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.90  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### CONTROL LEVER

control lever  
position degree : 104.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1175

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85

Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1270

Tolerance 1/min :  $\pm$  15

#### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm :  $\pm$  0.10

## Testing:

Rated speed rpm : 400  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.10  
  
rack travel mm : 2.00  
Rated speed rpm : 500  
Tolerance 1/min :  $\pm$  30

### TORQUE CONTROL

Rated speed rpm : 925  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1125  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1025  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.70  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 150  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 800  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.15

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1125  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 161.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 91.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

### LOW IDLE

Rated speed rpm : 400  
  
Rack travel in mm : 4.90  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.08.97  
Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump  
Pump designation : PES6P120A120RS7390  
EP type number : 0 412 726 945

Governor  
Governor design. : RQV350...1100PA1244K  
Governor no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 179.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 90  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.70  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100



Rack travel in mm : 13.70  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.27  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.79  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 4.28  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1195

Rack travel in mm : 12.00  
Tolerance mm :  $\pm$  2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 12.70  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1240  
Tolerance 1/min :  $\pm$  15

Check  
speed 1/min : +- 20  
rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : +- 4.0

control lever  
position degree : 20.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.50

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : +- 0.10

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.70  
Tolerance mm : +- 0.05

Rated speed rpm : 700  
rack travel mm : 13.85  
Tolerance mm : +- 0.10

Rated speed rpm : 500  
rack travel mm : 12.95  
Tolerance mm : +- 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 700  
Pressure hPa : 1500  
rack travel mm : 13.85  
Tolerance mm : +- 0.10

L20

Rated speed rpm : 700  
Pressure hPa : -  
rack travel mm : 10.40  
Tolerance mm : +- 0.20

#### MEASUREMENT

Rated speed rpm : 700

Pressure hPa : 400  
rack travel mm : 11.70  
Tolerance mm : +- 0.20

Pressure hPa : 600  
rack travel mm : 13.30  
Tolerance mm : +- 0.05

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.08.97  
Test oil : ISO 4113

Combination No. : 0 402 846 060

Injection pump  
Pump designation : PE6P120A32ORS8015  
EP type number : 0 412 826 016

Governor  
Governor design. : RQV300...1050PA1141  
Governor no. : 0 421 814 091

Cust. part No. : 11031819  
: -P03 V. 2.95

## Customer-spec. information

Customer : VCE  
Motor : TD122KFE-P5880  
Power KW : 296.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

#### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 11.30  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 325

Rack travel in mm : 3.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1121

guide sleeve  
travel mm : 8.44  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 325

guide sleeve  
travel mm : 2.04

L23

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1035  
guide sleeve  
travel mm : 6.98  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.65  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 9.50  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 10.30

Rated speed rpm : 1110  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + 15  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1260

#### LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
 position degree : 12.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225  
 CRT mm min. : > 5.40

#### Testing:

Rated speed rpm : 325  
 rack travel mm : 3.80  
 Tolerance mm : + 0.10

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 700  
 rack travel mm : 11.30  
 Tolerance mm : + 0.05

Rated speed rpm : 700  
 rack travel mm : 10.45  
 Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1500  
 rack travel mm : 12.25  
 Tolerance mm : + 0.25

Rated speed rpm : 500  
 Pressure hPa : -  
 rack travel mm : 7.80  
 Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500  
  
 Pressure hPa : 850  
 rack travel mm : 3.00  
 Tolerance mm : + 0.20

Pressure hPa : 300  
 rack travel mm : 0.25  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : > 230

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : > 250

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 269.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 188.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 3.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.08.97  
Test oil : ISO 4113

Combination No. : 0 402 846 067

Injection pump  
Pump designation : PE6P120A320RS8015  
EP type number : 0 412 826 016

Governor  
Governor design. : RQV300...1050PA1225  
Governor no. : 0 421 814 151

Cust. part No. : 11031773  
: -P03 v.05/96

Customer spec. information  
Customer : VCE  
Motor : TD122KAE  
Power KW : 243.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 138  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700



Rack travel in mm : 9.30  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131  
guide sleeve  
travel mm : 8.61  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.04  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1038  
guide sleeve  
travel mm : 7.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.65  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 9.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 8.30  
Rated speed rpm : 1120  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1260

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 10.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. :  $>$  5.40

#### Testing:

Rated speed rpm : 325  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520  
rack travel mm : 1.30  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 290  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.08.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 846 082  
  
Injection pump  
Pump designation : PE6P120A32ORS8051  
EP type number : 0 412 826 037  
  
Governor  
Governor design. : RQV300...1050PA1225  
Governor no. : 0 421 814 151

Cust. part No. : 11127056  
: -P02 v.08/97

Customer-spec. information  
Customer : VCE  
Motor : TD122KME  
Power kW : 245.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 078  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 20.0  
  
Test nozzle holde  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 258.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131  
guide sleeve  
travel mm : 8.61  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.04  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1038  
guide sleeve  
travel mm : 7.03  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 4.65  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1300  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 8.30  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 258.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 63.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 117.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 11.10  
Rated speed rpm : 1120  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1260

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 7.00

#### Testing:

Rated speed rpm : 325  
rack travel mm : 3.60  
Tolerance mm : + 0.10

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.10  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.10  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.00  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 640  
rack travel mm : 1.60  
Tolerance mm : + 0.20

Pressure hPa : 290  
rack travel mm : 0.25  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.60  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.08.97  
Test oil : ISO 4113  
Combination No. : 0 403 476 148  
Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0 413 406 123  
Governor  
Governor design. : RSV350...1200MWOA405  
Governor no. : 0 420 085 294

Cust. part No. : 0270741802

Customer spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 118.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (E) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 5.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180  
Aneroid pressure

hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

##### CONTROL LEVER

control lever  
position degree : 107.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.65

Rated speed rpm : 1233

Tolerance 1/min : ± 3

rack travel mm : 4.00

Rated speed rpm : 1290

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 350

rack travel mm : 6.30

Tolerance mm : ± 0.25

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : ± 30

##### TORQUE CONTROL

Rated speed rpm : 1180

rack travel mm : 11.65

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : ± 0.10

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 350  
rack travel mm : 1.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 275  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

M08

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

STARTING FUEL DELIVERY

Check hydraulic start locking and  
unlocking device with 500...1000 hPa.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 350  
  
Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.08.97  
Test oil : ISO 4113  
Combination No. : 0 403 476 151  
Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0 413 406 123  
Governor  
Governor design. : RSV350...1200MWOA405  
Governor no. : 0 420 085 294

Cust. part No. : 0270742302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 118.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1180  
Rack travel in mm : 11.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 5.25

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180

Aneroid pressure

hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.65

Rated speed rpm : 1233

Tolerance 1/min : ± 3

rack travel mm : 4.00

Rated speed rpm : 1290

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1400

---

##### LOW IDLE

control lever

position degree : 81.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Testing:

Rated speed rpm : 350

rack travel mm : 6.30

Tolerance mm : ± 0.25

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : ± 30

---

##### TORQUE CONTROL

Rated speed rpm : 1180

rack travel mm : 11.65

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : ± 0.10

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
Pressure hPa : -  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 350  
rack travel mm : 1.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 275  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Check hydraulic start locking and  
unlocking device with 500...1000 hPa.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 350  
  
Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.07.97  
Test oil : ISO 4113

Combination No. : 0 402 736 907

Injection pump  
Pump designation : PES6P120A120RS7432  
EP type number : 0 412 726 967

Governor  
Governor design. : RQV450...1100PA1334K  
Governor no. : 0 421 815 549

Cust. part No. : 3931940

Customer-spec. information  
Customer : CDC  
Motor : 6CTA-A  
Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

M12

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.03  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.25  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 227.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 450

Rack travel in mm : 6.40

Tolerance mm : ± 0.20

Del. quantity

cm<sup>3</sup>/1000 strokes : 31.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1162

guide sleeve

travel mm : 7.49

Tolerance mm : ± 0.15

Rated speed rpm : 450

guide sleeve

travel mm : 1.33

Tolerance mm : ± 0.20

Rated speed rpm : 860

guide sleeve

travel mm : 4.55

Tolerance mm : ± 0.25

Rated speed rpm : 1560

guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 900

Del. quantity

cm<sup>3</sup>/1000 strokes : 227.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever

position degree : 117.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 13.20

Rated speed rpm : 1170

Tolerance 1/min : ± 15

rack travel mm : 8.00

Rated speed rpm : 1250

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

---

##### LOW IDLE

control lever

position degree : 76.5

tolerance degree : ± 4.0

Control lever difference

Grad : 40.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 375

CRT mm min. : > 7.70

#### Testing:

Rated speed rpm : 450  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 525

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 900

Rated speed rpm : 1000  
Pressure hPa : -  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 400  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.20

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 390

Check  
speed 1/min : > 80

Check  
speed 1/min : < 400

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 900

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

##### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

##### Aneroid pressure

hPa : -

Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00

Tolerance mm :  $\pm$  0.50

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  25.0

#### LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 6.40

Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0



Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.97  
Test oil : ISO 4113

Combination No. : 0 402 736 911

Injection pump  
Pump designation : PES6P120A120RS7370  
EP type number : 0 412 726 934

Governor  
Governor design. : RQV400...1250PA1212  
: -2K  
Governor no. : 0 421 815 528

Cust. part No. : 3931537

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 135.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

Rated speed rpm : 460

Rack travel in mm : 5.40  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1412  
guide sleeve

travel mm : 9.88  
Tolerance mm : ± 0.15

Rated speed rpm : 420  
guide sleeve

travel mm : 1.56  
Tolerance mm : ± 0.20

Rated speed rpm : 1020  
guide sleeve

travel mm : 5.97  
Tolerance mm : ± 0.25

Rated speed rpm : 2000  
guide sleeve

travel mm : 13.50

M17

Tolerance mm : ± 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1320

Tolerance 1/min : ± 25

rack travel mm : 4.00

Rated speed rpm : 1580

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1700

##### LOW IDLE

control lever  
position degree : 63.5  
tolerance degree : ± 6.0

Control lever difference

Grad : 50.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.20

## Testing:

Rated speed rpm : 460  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 425

### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200

Rated speed rpm : 1250  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 440  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.30

Pressure hPa : 265  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.20

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  315

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  325

M18

## FUEL DELIVERY CHARACTERISTICS

### Aneroid pressure

hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 13.0

### Aneroid pressure

hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  25.0

## LOW IDLE

Rated speed rpm : 460  
Rack travel in mm : 5.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.97  
Test oil : ISO 4113

Combination No. : 0 402 736 912

Injection pump  
Pump designation : PES6P120A120RS7370  
EP type number : 0 412 726 934

Governor  
Governor design. : RQV400...1250PA1212  
: -3K  
Governor no. : 0 421 815 529

Cust. part No. : 3931539

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 134.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

M20

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

Rated speed rpm : 460

Rack travel in mm : 5.40

Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1412

guide sleeve  
travel mm : 9.88

Tolerance mm : ± 0.15

Rated speed rpm : 420

guide sleeve  
travel mm : 1.56

Tolerance mm : ± 0.20

Rated speed rpm : 1020

guide sleeve  
travel mm : 5.97

Tolerance mm : ± 0.25

Rated speed rpm : 2000

guide sleeve  
travel mm : 13.50

M21

Tolerance mm : ± 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

##### CONTROL LEVER

control lever

position degree : 114.0

tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1320

Tolerance 1/min : ± 25

rack travel mm : 4.00

Rated speed rpm : 1580

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1700

##### LOW IDLE

control lever

position degree : 62.5

tolerance degree : ± 6.0

Control lever difference

Grad : 51.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.20

### Testing:

Rated speed rpm : 460  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 425

### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200

Rated speed rpm : 1250  
Pressure hPa : -  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.20

### MEASUREMENT

Rated speed rpm : 1250  
Pressure hPa : 440  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.30

Pressure hPa : 265  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  315

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  325

M22

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 13.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  25.0

### LOW IDLE

Rated speed rpm : 460  
Rack travel in mm : 5.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0



Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.97  
Test oil : ISO 4113

Combination No. : 0 402 736 913

Injection pump  
Pump designation : PES6P120A120RS7369  
EP type number : 0 412 726 935

Governor  
Governor design. : RQV400...1400PA1211  
: -1K  
Governor no. : 0 421 815 530

Cust. part No. : 3931538

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 160.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery blocking

\*NW after s.o.d. : 6.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 13.0

Rated speed rpm : 435

Rack travel in mm : 5.80

Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1410  
guide sleeve

travel mm : 8.73

Tolerance mm : ± 0.25

Rated speed rpm : 400

guide sleeve

travel mm : 2.01

Tolerance mm : ± 0.25

Rated speed rpm : 1488

guide sleeve

travel mm : 9.53

Tolerance mm : ± 0.25

Rated speed rpm : 462

guide sleeve

travel mm : 2.91

Tolerance mm : ± 0.25

Rated speed rpm : 512

guide sleeve

travel mm : 3.37

Tolerance mm : ± 0.25

Rated speed rpm : 1000

guide sleeve

travel mm : 5.53

Tolerance mm : ± 0.25

Rated speed rpm : 2130

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 13.0

##### CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : ± 6.0

##### RATED SPEED

rack travel mm : 13.40

Rated speed rpm : 1450

Tolerance 1/min : ± 25

rack travel mm : 5.50

Rated speed rpm : 1650

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1875

##### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  6.0

Control lever difference  
Grad : 50.0  
tolerance degree :  $\pm$  6.0

Setting point w/out bumper spring

Rated speed rpm : 300  
CRT mm min. :  $>$  8.70

Testing:

Rated speed rpm : 435  
rack travel mm : 5.80  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1100  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1300  
Pressure hPa : 1500

Rated speed rpm : 1300  
Pressure hPa : -  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 1300  
Pressure hPa : 965  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.30

Pressure hPa : 390  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.20

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  340

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  350

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : 1500  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 435

Rack travel in mm : 5.80  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.09.95  
Test oil : ISO 4113

Combination No. : 0 402 776 818

Injection pump  
Pump designation : PES6P120A72ORS7382  
EP type number : 0 412 726 943

Governor  
Governor design. : RSV400...1100POA547  
: -5  
Governor no. : 0 421 833 481

Cust. part No. : RE62686

## Customer spec. information

Customer : DEERE  
Motor : 6081 HF001  
Power kW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

M28

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery mark

\*NW after s.o.d. : 9.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

and maximum rack  
travel : 14.00  
Difference \* CS : 2.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 4.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree :  $\pm$  4.0

#### RATED SPEED

rack travel mm : 11.10  
Rated speed rpm : 1155

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1210

Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1215

Tolerance 1/min :  $\pm$  15

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00

Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.35  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.11.95  
Test oil : ISO 4113

Combination No. : 0 402 776 820

Injection pump  
Pump designation : PES6P120A720RS7382  
EP type number : 0 412 726 943

Governor  
Governor design. : RSV400...110CP0A547  
: -6  
Governor no. : 0 421 833 488

Cust. part No. : RE62648

Customer-spec. information  
Customer : DEERE  
Motor : 6081 AF001  
Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

N03

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : +- 1.0

Prestroke mm : 3.60  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 10.50  
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery mark

\*NW after s.o.d. : 7.50  
Tolerance : +- 0.50  
Check  
tolerance \*NW : +- 0.75

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 14.00  
Difference ° CS : 2.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.70  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 10.70  
Rated speed rpm : 1155  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1280

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min :  $\pm$  15

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1300

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 740  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 380  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 14.11.95

Test oil : ISO 4113

Combination No. : 0 402 776 825

## Injection pump

Pump designation : PES6P120A720RS7382

EP type number : 0 412 726 943

## Governor

Governer design. : RSV400...1100P0A574

: -?

Governer no. : 0 421 833 496

Cust. part No. : RE63768

## Customer-spec. information

Customer : DEERE

Motor : 6081 AF001

Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde  
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N06

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

\*NW after s.o.d. : 7.50

Tolerance : ± 0.50

Check

tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00

Difference \* CS : 2.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.70  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

N07

Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 95.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 10.70  
Rated speed rpm : 1155  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1280

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min :  $\pm$  15

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 740  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 380  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

N08

Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.09.95  
Test oil : ISO 4113

Combination No. : 0 402 776 826

Injection pump  
Pump designation : PES6P120A720RS7382  
EP type number : 0 412 726 943

Governor  
Governor design. : RSV400...1100POA547  
: -8  
Governor no. : 0 421 833 498

Cust. part No. : RE63769

Customer-spec. information  
Customer : DEERE  
Motor : 6081 HF001  
Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N09

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## Start of delivery mark

\*NW after s.o.d. : 9.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

and maximum rack  
travel : 14.00  
Difference \* CS : 2.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

N10

Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 11.10  
Rated speed rpm : 1155  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1215  
Tolerance 1/min :  $\pm$  15

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:



Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1300

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.35  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -

N11

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.01.96  
Test oil : ISO 4113  
  
Combination No. : 0 402 776 827  
  
Injection pump  
Pump designation : PES6P120A720RS7399  
EP type number : 0 412 726 951  
  
Governor  
Governor design. : RSV475...1000POA547  
                  : -9  
Governor no. : 0 421 833 506  
  
Cust. part No. : RE65507

Customer-spec. information  
Customer : DEERE  
Motor : 6101 AT010  
Power KW : 221.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 2 417 413 079  
  
Inlet press. bar : 2.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 015  
  
Outside diameter : 6.0

N12

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
  
Phasing : 0-60-120-180-240  
          : -300

## Start of delivery mark

\*NW after s.o.d. : 7.00  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 13.45  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.5

Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

Rated speed rpm	: 525
Rack travel in mm	: 5.60
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 21.5
Tolerance	
cm3/1000 strokes	: +- 3.0
Check tolerance	
cm3/1000S.	: +- 5.0
Spread	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring	
pre-tension	
click setting x	: 3.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 1600

Del. quantity	
cm3/1000 strokes	: 235.5
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

#### CONTROL LEVER

control lever	
position degree	: 90.0
tolerance degree	: +- 4.0

#### RATED SPEED

rack travel mm	: 12.40
Rated speed rpm	: 1060
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1125
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1200

rack travel mm	: 4.00
Rated speed rpm	: 1145
Tolerance 1/min	: +- 15

#### LOW IDLE

control lever	
position degree	: 74.0
tolerance degree	: +- 4.0

#### Setting point w/out bumper spring

Rated speed rpm	: 525
rack travel mm	: 5.10
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
-------------	-----------

#### Testing:

Rated speed rpm	: 525
-----------------	-------

rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1600  
  
Rated speed rpm : 500  
Pressure hPa : --  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 1000  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 590  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : --  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 525  
  
Rack travel in mm : 5.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.04.96  
Test oil : ISO 4113

Combination No. : 0 402 776 828

Injection pump  
Pump designation : PES6P120A720RS7403  
EP type number : 0 412 726 952

Governor  
Governor design. : RSV400...1050POA547  
                  : -10  
Governor no. : 0 421 833 507

Cust. part No. : RE64818

Customer-spec. information  
Customer : DEERE  
Motor : 6101 HF001  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300

Start of delivery mark

\*NW after s.o.d. : 9.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack  
travel : 14.00  
Difference \* CS : 3.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 400

Rack travel in mm : 6.00  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 3.25

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 1800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 92.0

tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.65

Rated speed rpm : 1100

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min :  $\pm$  5

rack travel mm : 0.85

Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1250

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min :  $\pm$  15

---

##### LOW IDLE

control lever  
position degree : 71.0

tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.50

Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.65  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1800

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 1110  
rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 610  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -

N17

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 6.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.97  
Test oil : ISO 4113

Combination No. : 0 402 796 206

Injection pump  
Pump designation : PES6H120/720RS1007  
: -1  
EP type number : 0 412 726 209

Governor  
Governor design. : RE33  
Governor no. : 0 421 890 366

Cust. part No. : 309 4348

Customer-spec. information  
Customer : CUMMINS  
Motor : QST30  
Power KW : 783.0

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Prestroke mm : 9.95  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75



Barrel no. : 1

#### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
 $n=600 \text{ min}^{-1}$ ,  $U_{act} = 2.5 \text{ V}$

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed  $\text{min}^{-1}$ : 0

Setting point  
(P, R and H pump)

$U_{act} \text{ V}$  : 3.100  
CRT mm : 13.00  
Tolerance mm :  $\pm 0.05$   
Check  
tolerance mm :  $\pm 0.10$

Check value  
(P, R and H pump)

$U_{act} \text{ V}$  : 1.700  
CRT mm : 6.15  
Tolerance mm :  $\pm 0.25$   
Check  
tolerance mm :  $\pm 0.30$

Setting point  
(M pump)

$U_{act} \text{ V}$  : 3.100  
CRT mm : 12.50  
Tolerance mm :  $\pm 0.05$   
Check  
tolerance mm :  $\pm 0.10$

Check value  
(M pump)

$U_{act} \text{ V}$  : 1.700  
CRT mm : 5.50  
Tolerance mm :  $\pm 0.25$   
Check  
tolerance mm :  $\pm 0.30$

Stop position

$U_{act} \text{ V}$  : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm :  $\pm 0.25$   
Check  
tolerance mm :  $\pm 0.35$

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed  $\text{min}^{-1}$ : 60  
Amplitude V : 1.4  
Tolerance V :  $\pm 0.6$   
Check  
tolerance V :  $\pm 1.20$

Engine speed  $\text{min}^{-1}$ : 600  
Difference  
Amplitude to  
Amplitude V : max. 1.4

#### (C) INJECTION PUMP WITH POSITIONER

##### TEST POINT V1

Rated speed rpm : 1050  
 $U_{act} \text{ V}$  : 3.315  
Del. quantity  
 $\text{cm}^3/1000 \text{ strokes}$  : 358.0  
Tolerance  
 $\text{cm}^3/1000 \text{ strokes}$  :  $\pm 1.0$   
Check tolerance  
 $\text{cm}^3/1000 \text{ S.}$  :  $\pm 4.0$   
Speed  
Tolerance  
 $\text{cm}^3/1000 \text{ strokes}$  : 5.0  
Check tolerance  
 $\text{cm}^3/1000 \text{ S.}$  : 9.0  
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750  
 $U_{act} \text{ V}$  : 3.350  
Del. quantity  
 $\text{cm}^3/1000 \text{ strokes}$  : 386.0  
Tolerance  
 $\text{cm}^3/1000 \text{ strokes}$  :  $\pm 3.0$   
Check tolerance  
 $\text{cm}^3/1000 \text{ S.}$  :  $\pm 6.0$

##### TEST POINT L1

Rated speed rpm : 300  
 $U_{act} \text{ V}$  : 1.400  
Tolerance Volt :  $\pm 0.060$

Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 2.450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.08.97  
Test oil : ISO 4113  
Combination No. : 0 402 796 207  
Injection pump  
Pump designation : PES6H120/320RS1008  
: -1  
EP type number : 0 412 726 208

Governor  
Governor design. : RE33  
Governor no. : 0 421 890 367

Cust. part No. : 309 4347

Customer-spec. information  
Customer : CUMMINS  
Motor : QST30  
Power KW : 783.0

## TEST BENCH REQUIREMENTS

Inlet line : EHAB  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 082  
Inlet press. bar : 3.0  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Prestroke mm : 9.95  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 25.00

Tolerance :  $\pm$  0.50  
Check  
tolerance \*NW :  $\pm$  0.75  
Barrel no. : 1

---

(B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm :  $\pm$  0.05  
Check  
tolerance mm :  $\pm$  0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm :  $\pm$  0.25  
Check  
tolerance mm :  $\pm$  0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm :  $\pm$  0.05  
Check  
tolerance mm :  $\pm$  0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm :  $\pm$  0.25  
Check  
tolerance mm :  $\pm$  0.30

Stop position

Uact V : Value with

N22

deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm :  $\pm$  0.25  
Check  
tolerance mm :  $\pm$  0.35

ENGINE-SPEED SENSOR

(ALL P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V :  $\pm$  0.6  
Check  
tolerance V :  $\pm$  1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.315  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 358.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 750  
Uact V : 3.350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 386.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

TEST POINT L1

Rated speed rpm : 300  
Uact V : 1.400  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 2.450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113

Combination No. : 0 402 796 812

Injection pump  
Pump designation : PES6P120A720RS7315  
EP type number : 0 412 726 902

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 017

Cust. part No. : RE 57373

Customer spec. information  
Customer : DEERE  
Motor : 6081  
Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

N24

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

## TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Check value  
(P, R and H pump)

Uact V : 1.700

CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(ALL P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700  
Uact V : 2.940  
Del. quantity  
cm3/1000 strokes : 237.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.590  
Tolerance Volt : +/- 0.060  
Check tolerance  
Volt : +/- 0.060  
Del. quantity  
cm3/1000 strokes : 26.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm3/1000 strokes : 115.0  
Tolerance  
cm3/1000 strokes : +/- 20.0  
Check tolerance  
cm3/1000S. : +/- 25.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 796 817  
Injection pump  
Pump designation : FES6F120A720RS7405  
EP type number : 0 412 726 954  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 037

Cust. part No. : RE 64862

Customer-spec. information  
Customer : DEERE  
Motor : 6101AF001  
Power KW : 242.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

N26

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
°NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1  
Beginning of delivery difference  
and maximum rack  
travel : 15.00



Difference \* CS : 2.50

---

(B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75

N27

Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(ALL P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max. 1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 3.030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Uact V : 3.120  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450  
Uact V : 1.740  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

End of test specification sheet